ECONOMIC IMPACT OF HIV/AIDS ON THE CONSTRUCTION SECTOR AND IMPLICATIONS FOR THE HOUSING POLICY

REPORT 2-

RESEARCH FINDINGS FROM THE NATIONAL ASSESSMENT AND CASE STUDIES

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EXECUTIVE SUMMARY

This study on the economic impact of HIV/AIDS on the construction sector and the implications for housing policy has been commissioned by the National Department of Housing and is funded by USAID. The Department was concerned about the impact of the disease on the supply of housing and its findings will dovetail with similar research being conducted on the demand side.

This report is part of a series of reports comprising the study and focuses on the national assessment of the impact of HIV/AIDS on the construction sector. Further reports will address Provincial investigations and policy implications for the construction and housing sectors in particular. This report is informed by a broad literature survey that was undertaken of the construction and housing sectors, personal interviews with national role players and selected settlement case studies. It attempts to draw out the key implications of the disease for the supply of low income housing. In addition, although provincial investigations are still underway, relevant findings have been incorporated into this report.

1.1 Relevance of the Research

Through the Department of Housing's housing subsidy mechanism, a range of low income housing options is being provided to qualifying beneficiaries using different housing supply systems (such as developer-led, social housing or People's Housing Process systems). At present there is no research available which will assist the Department to determine what the impact of HIV/AIDS will be on these different housing supply systems. Through this research it will be possible to see where the different supply systems are vulnerable and what the likely economic and demographic impacts will be on them and how this will knock-on to affect policy and implementation. In part, this research will also help to raise awareness of the impacts on the construction sector, which up to now, has done very little or no research into the supply side impacts. The research will also identify areas of need for further research.

1.2 Conceptual Framework for the Research

In order to measure the economic impact of HIV/AIDS on the supply of low-income housing, empirical modelling, based on demographic profiles and production costs, is undertaken. To obtain reasonable inputs and assumptions for the modelling, it is necessary to understand how the sector works, who comprises it (demographic) and what costs are associated (economic) with supplying low income housing. Once detailed information was provided through the careful analysis of all the components and the agents who deliver within the system, two important modelling exercises were completed:

- modelling the demographic susceptibility of labour, professionals and other delivery agents and;
- modelling the impact on the cost of production and labour.

Because this study focuses on an entire sector comprising a range of supply systems, the components of each system needed to be 'unpacked'. The 'unpacking' of the different delivery systems was also important in identifying intrinsic

weaknesses or stresses in each system, even before the impact of HIV/AIDS is determined.

Where possible, the 'knock-on' effects of HIV/AIDS on other sectors or are also indicated, mainly because the housing supply system involves a range of players who are also involved in other aspects of construction, finance provision, administration and so forth and it impacts cannot be contained within the sector alone.

1.3 Research Methodology

Given the complexities of the sectors under investigation in this study, it was important to develop a solid information base and understanding of all the factors affecting the sectors. This information base was built up through four processes.

The 'unpacking' of the low-income housing sector began with a broad literature review of the construction and housing sectors and their components, to determine what research had been done to date on the impact of HIV/AIDS and to inform the content of the national interviews.

Secondly, national level interviews were held with large developers and contractors active in the low income housing market, non-government organisations, financial institutions, materials manufacturers and suppliers, government departments, and relevant unions and medical aids to assist in broadening the information base largely lacking in the literature. Senior management in these organisations were asked, *inter alia*, about trends in their sector and organisations, the costs associated with their delivery functions, impacts of the disease on their organisations and perceptions of the future impacts.

The third input into the information base comprised settlement studies. These provided 'on the ground' detailed information of the delivery systems in practice. Fourthly, a host of telephonic interviews were carried out with housing contractors to provide additional detail and verify some of the trends and practices noted by other role players in the housing sector.

From this information base, a clear picture of the sector, the actors, how they operate, what their costs are, where they are vulnerable, what they are currently doing about the disease and their perceptions of likely future impacts was obtained. It is off this comprehensive information base that the demographic and economic impacts could be modelled and impacts and implications chartered.

1.4 Report Structure

This National report comprises four main chapters after the introduction. Chapter 2 is largely the information base referred to above as it spells out how the low income housing sector operates along with the costs of production. While this Chapter takes a comprehensive approach, certain detailed information relating to this chapter is supplemented in summary Annexures to the report.

Chapter 3 begins to interpret the findings in Chapter 2 by examining the susceptibility of various delivery agents' to the demographic impact of HIV/AIDS. More detailed information pertaining to this chapter is also contained in Annexures to the report.

Chapter 4 examines the economic impact of HIV/AIDS on the different delivery agents of housing supply systems.

Chapter 5 shifts from the analysis of delivery agents to look at the implications of the demographic and economic impacts on the three supply systems under analysis, with particular reference to the financial implications.

1.4 Research Team

This research process has been undertaken by Development Works, with contributions from ABT Associates, the Centre for the Study of AIDS, and the Medical Research Council. The Development Works team consists of Cecile Ambert, Project Leader, Marc Feldman, strategic and management support, Gemey Abrahams, Ted Baumann, strategic support and research, Nadia Goetham and Thavanassen Govender research. The ABT Associates team consists of Malcolm Steinberg and Gill Schierhout. The Centre for the Study of Aids team comprises Mary Crew, Nolwazi Gasa and Johan Maritz. Liz Thomas is responsible for the Council for Medical Research's contribution.

2. Supply Systems for State-Assisted Housing - How the Housing Policy is Implemented.

The South African housing policy related to low income housing is driven by the provision of a once-off subsidy of R16 000.00, depending on income. It allows for different types of subsidies including subsidies to individuals through projects (project-linked, consolidation or People's Housing Process) and individually or to institutions for social housing (institutional subsidies).

It was agreed by all of the study partners that three supply systems be investigated as these deliver the bulk of all low-income housing. The supply systems are:

- Developer/contractor supply system: where private developers/contractors are the main drivers where casual labour provides most of the unskilled and semi-skilled inputs.
- People's Housing Process (PHP) supply system: where beneficiaries play a role in construction. There is a new shift in emphasis in national policy towards this supply system, making it an important system to investigate.
- Institutional housing supply system: where an institution receives the subsidy and builds medium-density housing for qualifying beneficiaries. It provides formal, high quality units and has high financing demands. Government intends placing more emphasis on this form of delivery in the future, making it an important system to investigate.

The supply of a house is a process which involves a number of inputs and each needs to be understood in order to obtain a broader picture of impact of the disease on it. The inputs or key components identified in this study are:

- The bridging finance component - this is usually provided by financial institutions to developers to provide up-front starting capital until the subsidy money flows into the project. It is generally expensive, provided selectively and adds to the cost of housing;
- The end-user finance component -this is only needed where the cost of the subsidy house is greater than the subsidy. It is taken out by the beneficiary who must meet qualifying conditions of the financial institution who lends the money except in institutional housing where the institution secure finance and beneficiaries contribute to this through their rent;

- The planning of the development and assembly of land - this is a lengthy process involving developers and government institutions where delays can contribute significantly to holding costs.
- The delivery of services - is also a lengthy process involving the site preparation and installation of roads, water, sanitation and electricity. It requires considerable co-ordination of contractors, engineers and government officials and delays here also contribute to costs. It is usually the largest cost component of low-income housing.
- The construction of the actual house (top structure) - this varies across the three supply systems resulting in variable relative costs.
- Materials supply sub-component - this cuts across many of the components but impacts largely on the top structure construction. It is vulnerable to the cost of transport and inflation.
- Housing Management component - this is most evident in institutional housing as it relates to the administration of the housing after occupation.

In the three supply systems chosen in this study, the role of each of these varies and will therefore result in a different overall impact of the disease. This is why the three supply systems were identified rather than developing a generic or average type of supply system which would have the effect of not representing accurately any of the delivery systems.

In order to understand the demographic and economic impact of HIV/AIDS in the housing supply systems, it is important to know who comprises many of the components listed above. The main types of actors include:

- Private sector developers- who take contractual and financial responsibility for the implementation of housing projects;
- Housing support NGO's who assist beneficiaries in the People's Housing Process by providing technical and facilitation support;
- Bridging finance and end-user finance institutions;
- Professionals - mostly planners, engineers, land surveyors, quantity surveyors, architects, conveyancers, financial managers;
- Contractors and sub-contractors - are technically skilled personnel who undertake the site preparation, servicing and house construction. They range from highly skilled to semi-skilled artisans.
- Labour - local labour is generally unskilled and casual. They earn low wages and are often highly replaceable.
- Government officials - range from professionals who are involved in granting approval for different stages in the development through to administrative staff who process the subsidy. Delays due to lack of capacity in this echelon can impact negatively on housing delivery.
- Housing management institutions whose roles can entail owning and managing the housing stock developed by means of the institutional subsidy to providing technical and facilitation support to the implementation of institutional projects;
- Beneficiaries - these must earn below R3 500 per month in order to qualify for a housing subsidy, but many earn less than R1 500 per month which is the qualifying level to obtain a full subsidy.

3. Delivery Agents' Susceptibility to a Demographic Impact

This chapter comprises two parts. The first part explores the general demographic aspects of the spread of HIV/AIDS whereas the second part relates these to the demographic profiles of the different supply systems for low-income housing

identified in the study. The latter includes looking at the risk profile of the different delivery agents with the various low-income housing components, their perceptions of susceptibility to the disease as well as any evidence of prevalence.

In the first part it is noted that the disease is spreading at an estimated rate of 1 500 infections per day, but that the spread is unevenly distributed across the population. Some provinces have higher infection rates and some groups within the population are at higher risk due to their age, gender, sexual practices and level of mobility.

These risk factors are present to a greater or lesser degree across the workforce active in supplying low-income housing. Based on demographic models, likely susceptibility can be determined for the different categories of the workforce (e.g. semi-skilled workers, local labour and professionals).

In the interviews with key role players they were asked to comment on their own sector's susceptibility to infection and secondly to provide their perception of what other components they thought were particularly vulnerable. Some interesting trends emerged.

Those role players whose sector is largely comprised of white, male professionals in the 35 - 55 years age category indicated a low level of susceptibility (bridging finance institutions, end-user finance institutions, developers and higher echelons of the materials manufacture and supply companies).

In delivery agents that are undergoing a demographic transition with more younger, racially diversified skilled personnel entering the sector or those organisations that already employ a similar demographic profile indicated a likely or evident increase in susceptibility (professional organisations, housing support NGOs, housing management institutions).

The delivery agents that comprise or represent contractors, sub-contractors and labourers indicated the highest levels of susceptibility. The transport sub-sector of the materials suppliers also falls into this category. Mostly the workforce comprises black male workers, unskilled or semi-skilled and mobile or in the case of local labour, has characteristics of the high risk demographic category.

What is interesting from this survey is that evidence is emerging that the incidence of the disease appears to be increasing in the higher skilled contractors and young professionals and their status of having higher education and skills is not 'protecting' them from infection, as most assumed it would.

The perceptions that each delivery agent has about other delivery agents revealed a unanimous concern about beneficiaries. Many also cited a perception that incidence of the disease is high among contractors and labourers.

While the current demographic profile of the susceptible workforce (young poor, unskilled, mobile) is important in determining the demographic impact of HIV/AIDS in the low-income housing sector, the interviews and research have pointed to some important structural trends in the industry that will have an impact on the future levels of disease susceptibility. These include the fact that the construction industry is downsizing, that low-income housing developers are withdrawing from this market, that semi-skilled artisans are not entering the market and government procurement policy is favouring women and affirmative employment.

4. Vulnerability of Delivery Agents to an Economic Impact

The nature and extent of the demographic impact of HIV/AIDS on the workforce translates into an economic impact for the various delivery agents. This impact may be due not only to mortality or loss of members (e.g. replacement, retraining, benefits payouts) of the workforce but also morbidity (e.g. illness, absenteeism, morale, fatigue). This chapter looks at how the economic impact (direct and knock-on impacts) is felt by each of the delivery agents in the housing supply systems identified and notes their current economic responses to the impacts. At this stage, no quantification of the impact was done, rather the nature of the economic impact was indicated.

For those delivery agents such as bridging and end user finance institutions who employ staff full time with benefits, they indicated that the disease is likely to increase these costs, but indicated no other impacts at this stage.

Some delivery agents such as housing support NGOs and housing management institutions are expecting a greater skills shortage in their specialised personnel which will drive up the salaries. This economic impact is also expected in the skilled artisans category.

Other delivery agents felt that absenteeism of key personnel is likely to cause delays which will impact on timing and hence affect cash flow or overall costs of supply. The loss of staff will have varying impacts, depending on the level of skills they have and where they fit into the delivery chain. For small contractors and especially self-employed contractors the impact will be significant as the business collapses whereas there is unlikely to be any impact at this stage from loss of local and general labourers as supply outstrips demand.

Regarding responses to the economic impact, the overwhelming response was to shift the risk either onto the system as a whole or to individuals, however there were some responses that related to preventing (awareness campaigns, condoms) and managing (providing anti-retrovirals) the disease.

The construction industry and the low-income housing construction sector in particular, is already stressed and facing diminishing returns. The additional impacts of the disease will serve to force those still remaining out of the sector. Many companies indicated that they will move to more lucrative construction sectors (e.g. casinos) or relocate geographically. Additionally, most are shifting towards reducing their workforce and forcing greater casualisation of labour to cut their costs. Some offer lower wages to local labour. All these actions will place greater stress on the low-income housing sector. The other generic response is to shift risk to the individual through requiring insurance from beneficiaries or increasing the cost of the product, requiring end user finance. The beneficiaries of housing subsidies are the people least able to bear these increased costs, posing an increasing threat to the longer-term viability of housing projects. In combination, the entire housing supply system will feel these economic impacts.

5 The Economic Impact of HIV/AIDS on the three Housing Supply Systems

This chapter moves the analysis up a level to look at the implications that the demographic and economic impacts will have on the three housing supply systems chosen for this study.

5.1 Developer/Contractor supply system

The system is premised on profit maximisation and attempts at all times to avoid risk through and increase efficiencies. Delays in the development process impact negatively on profit margins (cost of bridging finance, holding costs of land, escalation in price of materials, labour). An expected response would be to pass these costs onto the final cost of the product. However, this supply system is highly dependent on the housing subsidy which is fixed and offers little opportunity for this. The target market is unable to raise much in the way of end-user finance. Other responses therefore are to leave the low-income housing market altogether or to try to lower specifications. Current national norms and standards make the latter almost impossible. This supply system already faces constraints and the impacts of HIV/AIDS is likely to exacerbate the situation.

5.2 Peoples' Housing Process supply system

This supply system relies on beneficiary contribution to housing development (social capital) in order to maximise the product. It is therefore less exposed to the negative financial impacts of delays. Because beneficiaries contribute to development, their demographic susceptibility to the disease (i.e. demand-side impacts) will also impact on supply.

5.3 Institutional housing supply system

The internal logic of this supply system is to maximise the product and relies on beneficiary contributions (deposit and rental) as the subsidy does not cover the high cost of supplying this type of housing (up to four times the amount of subsidy). It therefore relies on loan finance. There are indications that increasing default rates, arising from household HIV/AIDS economic impacts may impact on the future viability of this system.

6. Conclusions on the National Study

What is evident is that housing supply is a system, comprising a plethora of delivery agents who must all interact efficiently to produce a subsided house. While there are some inherent weaknesses in the system even before one begins to separate out the impact of HIV/AIDS, what is clear is that these weakness will be further exposed once the effects of the disease really 'kick in'. Secondly, the financial limits of the housing subsidy make it difficult to absorb financial impacts which, unless the subsidy is increased, will force end users to pay more, cause standards to drop or chase the limited number of developers out of the market. Thirdly, the short-term risk avoidance and cost reduction strategies being adopted, such as casualisation of staff, will have long term implications as fewer trained personnel enter this market, further hastening its demise.

In the next phase of the study and attempt is made to quantify these impacts in order to develop models to measure the impacts of the disease on the supply systems and the overall low-income housing market.

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1 INTRODUCTION

"HIV/AIDS will affect all areas of the housing industry – housing consumers, service providers and practitioners. In terms of consumers, potential impacts include market size and location; shifts in consumer demand and built form specifications; changes in household spending patterns; and increased risk of rental arrears and loan defaulting. Housing service providers' and practitioners' output may be influenced, depending on how many people are affected; their role in the organisation; its ability to cope with absenteeism; company benefits provided and the impact of the disease on competitors and the business environment in general"[1].

This report is the second of a series of research outputs focusing on the economic impact of HIV/AIDS on the construction sector and its implications for the implementation of National Housing Policy. It presents the findings of the national research to date. The research process is funded by USAID. It aims to provide strategic information to the National Department of Housing, about how the economic impact of HIV/AIDS will affect the implementation of the Housing Policy. This study focuses primarily on the supply side of the Policy's implementation. However, it intended that the relevant findings of a parallel research process, focusing on the impact of HIV/AIDS on the demand side of Policy Implementation will inform this supply side research when it becomes available.

In a previous output of the study,, which reviewed related literature, it was identified that past research has been framed primarily in respect of how to address the housing needs of HIV/AIDS affected households, and more specifically people living with HIV/AIDS. Only recently are investigations being made into how the demographic and economic impacts of HIV/AIDS may affect budgetary allocations for housing capital expenditure. Paradoxically, the recognition that HIV/AIDS will have a significant impact on the implementation of the housing policy, from a supply-side perspective, is only beginning to emerge among the range of housing and development role-players and stakeholders.

1.1 Why is this research process relevant?

Little thought has gone into appraising and accounting for the impacts which the pandemic will have on the supply side of housing development within the construction industry. And why should this be the case? The main reason is that the demand-driven approach adopted by the housing subsidy system provides subsidies to individual beneficiaries in the main, the national and provincial budgets are determined by the number of subsidies to eligible beneficiaries.

Yet policy-making and appraisal cannot take place in a vacuum. The implementation aspects of policy are key in determining the particular achievements of the policy. As some national and provincial departments have come to realise, policy in and of itself does not ensure implementation and change, even when significant budgets have been set aside to this effect. In the first two years of the Policy's implementation less than third of the budget set aside for housing development had been spent[2].

[1] Denny-Dimitriou. 2000. The HIV/AIDS time bomb – a nation in denial. Part One & Two

[2] Tomlinson, M. (July 1996), "From Rejection to Resignation- Beneficiaries' views on the government's housing subsidy scheme". Social Policy Series- Centre for Policy Studies. Research Report no 49.

The institutional and operational teething problems which hindered Housing Policy implementation in its foundation years were overcome once the implementation machinery and mechanisms were established. The achievements of the delivery of over one million subsidised housing opportunities, since 1994, suggests that to a large extent, the systems set up to implement the Policy have been successful in mobilising an extraordinary range of delivery agents, in the government, private and civil society sectors. The machinery remains fragile and is vulnerable to institutional and financial pressures and capacity limitations. These will be raised in the report.

The delivery of low-income housing is a complex process involving numerous role players to each contribute. Given the diversity of interests participating in the supply side of housing delivery, it is likely that the entire system will not escape impact as each of the contributors are affected in different ways. These contributors or delivery agents are likely to experience an economic impact, directly and indirectly, which may exacerbate existing pressures and limitations being experienced in the supply-side of low-income housing delivery.

This research process is premised on the assumption that no sector of society or the economy is immune from the impact of HIV/AIDS. Ample research has been undertaken which demonstrates, that HIV/AIDS is an all-pervasive, cross-cutting dimension of socio-economic and even political development in South Africa. Therefore the primary question of this research process is not so much whether HIV/AIDS will have an economic impact on the construction sector and the implementation of the Housing Policy, but how will the impact be felt on the different housing supply systems and their respective delivery agents

This research process has set itself the task of examining and assessing the nature and potential extent of the demographic and economic impacts of HIV/AIDS on the supply systems of housing delivery. In particular, the research aims:

- To provide baseline information on the economic impact of HIV/AIDS on the construction sector and its implication for the Housing Policy;
- To specify and assess the economic impact of HIV/AIDS on existing housing delivery supply systems, to assess their ability to continue performing their delivery roles in the light of the impacts that they will experience and how this may change their viability;
- To raise the awareness of construction sector role-players of the economic impact of HIV/AIDS on their interests:
- To provide a basis for undertaking further research that is more focused.

The term “supply system” refers to typical housing development processes for the delivery of state assisted housing. Three supply systems were identify in order to cover the main ways in which low-income housing is currently being developed or will be developed in the future. Because there are these different systems, it would have been entirely hypothetical to describe a generic supply system. While describing, analysing and modelling the three system does make for a detailed study, it is the most accurate way to 'unpack' how subsidised housing is being supplied in South Africa. . The three supply systems are:

- The developer/contractor led supply system;
- The People’s Housing Process supply system; and
- The institutional supply systems.

1.2 Conceptual framework for the research

As part of the research process, a detailed conceptual framework for identifying, measuring and assessing impact was formulated. This conceptual framework proposes to disaggregate the supply systems in respect of the manner in which they are typically applied in practice.

Identifying and measuring economic impact at the company or sector level is typically undertaken by analysing and modelling HIV/AIDS demographic prevalence profiles, or demographic susceptibility of labour. Following this, economic modelling activities can be undertaken on the basis of analysing how the demographic impact affects the cost of production of specific services or products. Characteristically, this involves considering issues such as direct costs to company in terms of medical and other social benefits (such as pension schemes, death benefits), as well as losses in productivity levels linked to morbidity and mortality of labour.

This methodology is best suited to companies or economic sectors with, on the one hand highly institutionalised human resources management systems, and on the other fairly standardised and quantifiable production processes. In practice, this requires that companies or sectors grant, record and monitor employee profiles and medical and other social benefits. Typically, this is seldom the case in terms of the delivery agents who are active in the supply side of housing development. In fact in this sub-sector, casualisation of labour and labour turnover are rife, the contributions of delivery agents are fragmented, and employee benefits are seldom offered. Additionally, while statistical information (from both the 1996 Population Census and the October Household Survey) exists, it has limitations in terms of accuracy over time (in a highly transitory sector), and because information is not stratified to level of the low-income housing sub-sector, but refers to the construction sector as a whole[3].

The second requirement for modelling purposes is the standardisation and quantification of the supply process. This is far from the case with low-income housing supply, which relies on three primary supply systems. Even within these supply systems significant variations exist in terms of both the implementation of the housing subsidy and the way different delivery agents operate in different Provinces and between projects. For instance, a contractor may opt to flood a site with materials and labour over a period of a month and achieve the same outputs as another contractor who opts to undertake construction over three to four months but with 25% less labour.

Understanding these variations and differences before attempting to quantify them, thus became an imperative in the research process. It created a solid base of information upon which to make modelling assumptions which would more accurately reflect reality. It has also enabled us to identify intrinsic vulnerabilities or weaknesses affecting delivery agents and supply systems, even before we begin to consider any demographic or economic impacts. Typically, in the construction sector, these are abundant and often structural and more severely felt in the in the low-income housing side of the construction sector.

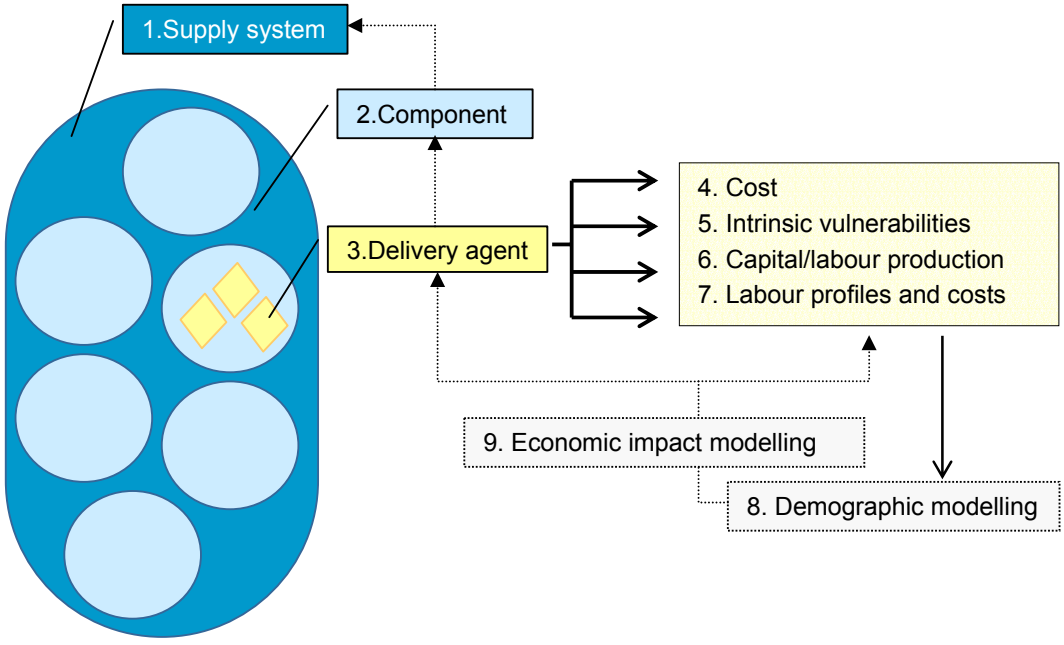
The conceptual framework for the research and the corresponding methodological steps, comprise two sets of activities which are detailed in a table attached as Annexure 10 of this report.

[3] Further, definitional errors have been noted in the data fields applied in the Census.

The first set of activities concerns itself with considering susceptibility to demographic impact and in turn vulnerability to direct economic impact. This is represented below in Figure 2, and comprises the following steps:

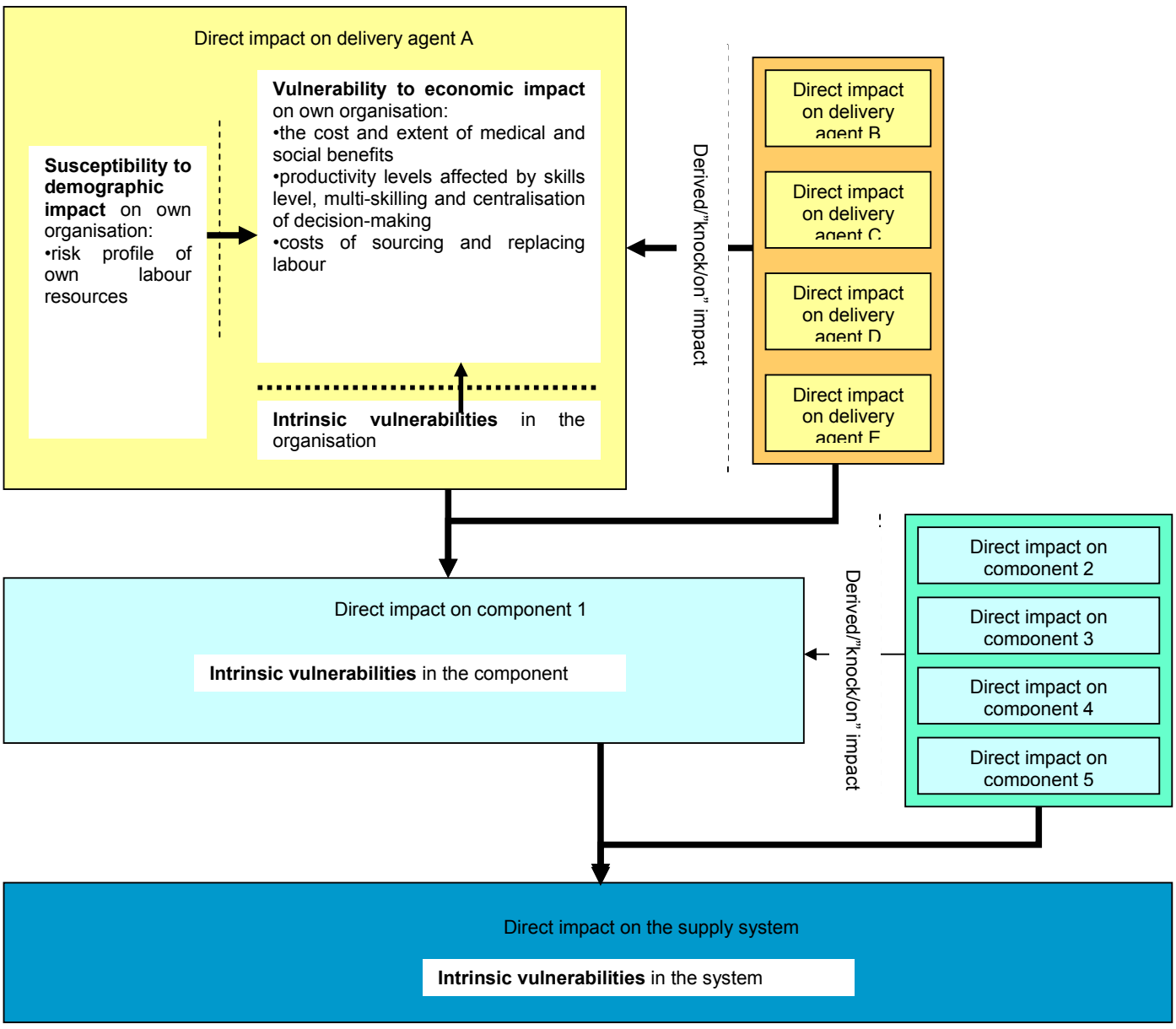
- The identification and analysis of the supply systems active in the implementation of the Housing Policy including the regulatory and financial frameworks (including subsidisation) within which they are operationalised;
- The identification and analysis of the different components contributing to these systems;
- The identification, analysis and specification of the different delivery agents playing a role in the components;
- The demographic and economic profiling of these delivery agents;
- The identification of risk factors affecting susceptibility to HIV/AIDS demographic impact;
- Modelling of the demographic susceptibility in terms of different categories of delivery agents;
- Economic modelling activities in terms of quantifiable and specific variables affecting the cost of labour and the cost of production in terms of different categories of delivery agents.

Figure 1: Overview of the conceptual framework of the research



The bulk of the modeling activities will focus on the first level of consideration. However, in terms of our analysis and understanding of the sector which operates as a system with inter-connected parts, it was important to document how the HIV/AIDS demographic and/or economic impact has a 'knock-on' impact on other delivery agents in the system... In respect of the sector focus of our research, this commands particular attention to the existing weaknesses of the delivery agents and the supply systems, to the cost of delays, the quality of contributions, and the cost of procuring different contributions from the delivery agents. This second level of analysis is represented in Figure 2 below.

Figure 2: Conceptual considerations of direct and derived/"knock-on" impacts

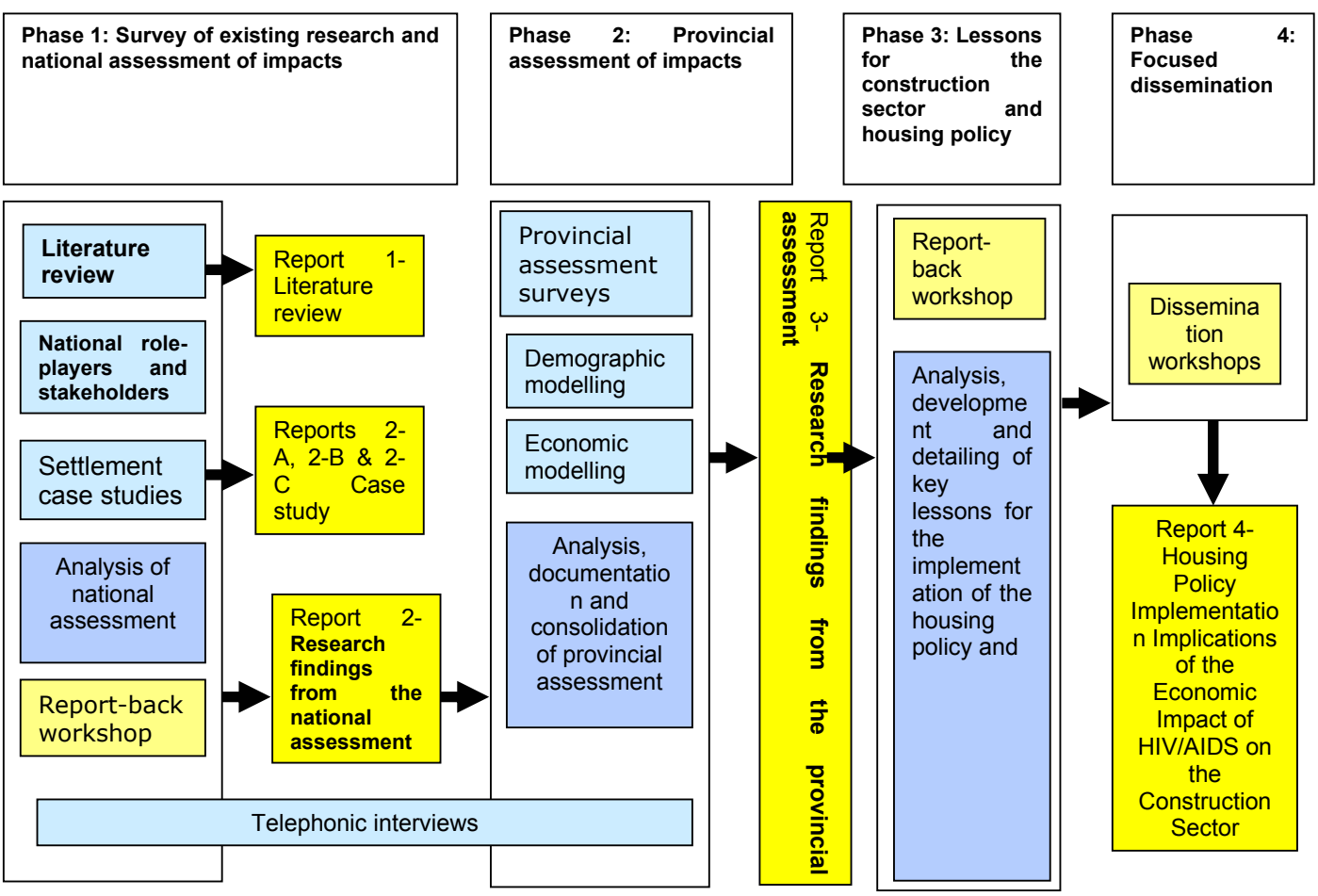


1.3 Research method

The research activities aim to provide baseline data from which to measure and assess economic and related impacts of HIV on the construction sector, as well as define and specify hypotheses for the economic modelling exercise. This report documents the findings of the research process to date, and will be augmented, by the findings from the provincial assessments and as more information is obtained during the life of the project. The overall findings of the research will then be used to formulate lessons for Housing Policy implementation and role-players active within the supply systems. A broader process of dissemination of the findings will take with stakeholders and relevant role-players.
Figure 3 below sketches out the different phases of the research. While the information on all the role-players and delivery agents is considerable, it was felt necessary given the absence of pertinent statistic information.

The first phase of the research comprised an in depth literature review of the construction industry and all the delivery agents which comprise it. This was followed by a number of national level interviews and three settlement level case studies. This provided the information base for the **national assessment** of the HIV/AIDS economic impact on the construction sector.

Figure 3: Research methodology



The intention of the literature survey was to **identify and appraise the research undertaken to date** in respect of factors affecting the research focus and to lay the conceptual basis for undertaking the national interview process. The national level interviews, on the other hand, were meant to deepen the understanding of the construction sector in relation to the housing delivery supply systems, gather evidence of impacts and concerns of nationally active role-players and stakeholders. For this purpose, the interviewees included:

- Large developers and contractors still active in low-income housing;
- Representative organisations in the construction sector;
- Industry analysts;
- Non-governmental housing support organisations, including some Housing Institutions;
- Bridging finance institutions;
- End user finance institutions;
- Materials manufacturers;
- Construction sector unions;
- Construction sector medical aid; and
- Governmental role-players.

Respondents were typically the strategic heads of the organisation, implementers and where required, the Human Resources Manager.

In the interviews, respondents were asked about:

- The general trends affecting their sector and organisations;
- Their role in the supply systems and perceptions of trends affecting their roles and that of other delivery agents in the systems;
- The costs and requirements for their contribution and that of others to the different components of the supply systems;
- Perceptions of their organisations' vulnerability to demographic and economic impacts;
- Evidence of demographic and economic impact of HIV/AIDS on their own organisations, on other delivery agents and on the systems;
- Actions taken to alleviate demographic and economic impact of HIV/AIDS;
- Perceptions of future demographic and economic impact of HIV/AIDS on their organisations, on other delivery agents and on the systems; and
- What their expected coping mechanisms will be to specific demographic and economic impact on their operational requirements, the services they provide, and on their ability to operate within existing financial frameworks.

Thirdly, the settlement level case studies were undertaken to confirm and provide finer detail of the demographic and economic impacts on the different supply systems. The cases where selected to ensure a measure of control and comparability in respect of their size and settlement environment. Their geographical location was also selected on the basis of the different HIV/AIDS prevalence rates in Gauteng, KwaZulu Natal and the Western Cape.

In addition, telephonic interviews with professional bodies and construction contractors were undertaken to verify existing research and get more information. As part of this process, the provincial Master Builders Associations and local builders associations were contacted Whilst close to 450 telephonic interviews with

contractors were sought[4], it was found that only 90 telephone numbers were still in use. Of these only 20 proved reliable and applicable to this study because the respondents had left either the low-income housing sector or the construction sector, or their company had been liquidated within the last two years. This reinforces information gathered in the course of the national interviews indicating the precariousness of construction sector SME's.

1.4 Structure of the report

Following this introductory chapter, the report comprises four chapters, namely:
Chapter 2 - this has two main sections. Section 1 examines the workings, components and intrinsic weaknesses of thesupply systems for the delivery of state assisted housing development whereas section 2 examines the cost of production associated with the housing supply systems, their components and their delivery agents' role;

- Chapter 3 - examines delivery agents' susceptibility to the demographic impact of the disease and their vulnerability to economic impact;
- Chapter 4 - examines the economic impact of HIV/AIDS on the three supply systems;
- Chapter 5 - presents issues discussed during the report-back workshop in respect of how theeconomic impact translates into an impact on the the financial feasiblity of the three supply systems.

Given the extensive breadth of the literature surveyed coupled with a concern to provide as much information as possible while keeping the report concise and focussed, specific topics from the literature review report have been summarised and appended to this report.

1.5 Research team

This research process has been undertaken by Development Works, with contributions from ABT Associates, the Centre for the Study of AIDS, and the Medical Research Council. The Development Works team consists of Cecile Ambert, Project Leader, Marc Feldman, strategic and management support, Gemey Abrahams, Ted Baumann, strategic support and research, and Thavanassen Govender, and Nadia Goetham research assistance. The ABT Associates team consists of Malcom Steinberg and Gill Schierhout. The Centre for the Study of Aids team comprises Mary Crew, Nolwazi Gasa and Johan Maritz. Liz Thomas is responsible for the Council for Medical Research's contribution.

[4] Based on three different directory sources compiled between 2000 and 2002 - including those of the National Home Builders Registration Council and the Department of Public Works

2 SUPPLY SYSTEMS OF STATE ASSISTED HOUSING DEVELOPMENT: HOW THE HOUSING POLICY IS IMPLEMENTED?

This Chapter outlines the key characteristics of the low-income housing supply systems and how it operates within the national housing subsidy policy. To do this it covers the following sections:

- An outline of the Housing Policy principles, objectives and instruments in order to contextualise the policy framework within which the housing supply systems operate; and
- Explaining each of the housing supply systems in terms of their components and delivery agents as well as intrinsic weaknesses and vulnerabilities.

2.1 Housing policy context

The Housing Policy context provides the framework within which state-assisted housing supply currently operates in South Africa. Its approach and mechanisms as well as the institutional and financial mechanisms set up to support the supply are the backdrop to implementation. These are examined briefly below, although more detailed information is attached as Annexures 1 and 2.

2.1.1 Housing policy approach

The South African Housing Subsidy Scheme policy is primarily a housing finance policy, where households are entitled to a once-off subsidy to cover the costs associated with tenure, services and a rudimentary top structure.

The Housing Subsidy Scheme currently provides six funding options to eligible people in the income bracket of R 3 500 per month and below. In terms of the focus of the research, the subsidy options which are drawn upon by the various supply systems are examined in sub-section 2.1.2 below. The government's approach to subsidisation does not aim to provide an extensive housing product benefit; rather it seeks to ensure that a majority of South Africans should benefit from State subsidies within the fiscal affordability of the State. The outcome is then the delivery of starter-houses, and at times at no outright costs to the users, who are then able to consolidate the products which they receive.

2.1.2 The Housing Subsidy Scheme as the financial fuel of implementation

In terms of the focus of the research, the subsidy options which are drawn upon by the various supply systems are as follows:

- Individual ownership subsidies: Individual ownership subsidies are targeted at enabling ownership of fixed residential properties for first time buyers. The subsidy levels are linked to the beneficiary's income.
- Consolidation subsidies: This subsidy is available to individuals who have previously received housing assistance from the State in the form of ownership of serviced sites to an amount less than the current subsidy. It is a 'top up' subsidy
- Institutional subsidies: Institutional subsidies are made available to housing institutions developing affordable housing stock. This is the only subsidy which caters for tenure options other than ownership.

In addition to having to earn less than R3 500 per month, individuals have been entitled to different subsidy amounts depending on the income bracket into which they fall, as follows:

- a monthly income between R0 to R1 500, households are eligible to access R 16 000;
- A monthly income between R 1 501 to R2 500, households are eligible to access R 10 000; and
- A monthly income between R2 501 to R3 500, households are eligible to access R5 500.

Institutional housing subsidies are R16 000 in respect of persons earning R3 500 and below per month. Over and above the amounts specified here, a 15% increment is made available on application to overcome the additional costs associated with difficult geophysical conditions.
Although the subsidy amounts were revised upwards in 1999, they did not keep up with inflation, which has ranged from 4% to 7% annually. It was only in on the 14th of May 2002, that the government announced an increase in the subsidy amounts to align the value of the subsidy to the effect of escalation on its buying power. In future, this upward alignment is to be reviewed annually on the basis of a formula to be developed for this purpose.

The current escalation was calculated on the basis of the Core Consumer Price Index which has averaged 7.84% annually. On the basis of this escalation, the present value of the 1996 subsidy amount of R16 000 should be equivalent to R20 058. The cost of the escalated serviced stand amounts to R9 4000, and that of the 30m2 house R10 675 according to the Core CPI escalation. According to the construction industry's escalated cut list costing principle, the cost of the 30m2 house is estimated at R13 418. It is the latter amount that was selected to increase the amount of the subsidy.

As part of this review, Cabinet approved the principle of a beneficiary contribution, to be made either in terms of a financial contribution, or through participation in the People's Housing Process. For the former, this beneficiary contribution has been set at R2 479. Therefore, the new amount is R22 819, minus the beneficiary contribution of R 2479, or R 20 340. The new breakdown per subsidy band is as follows:

- From a monthly income of R0 to R1 500, households are eligible to access R20 340;
- From R1 501 to R2 500, households are eligible to access R12 700; and
- From R2 501 to R3 500, households are eligible to access R7 000.

The consolidation subsidy has been increase from R8 500 to R10 940.
Old age, disabled and indigent households will be able to claim the full R22 800 subsidy. In addition, the subsidy amounts for medium density housing- primarily developed through the institutional subsidy has been increased to R27 000.

Because of this increase has not yet been implemented, its impacts on the financial viability of housing delivery are yet to materialise. In the course of the national and provincial interviews to date, and the case studies the 1999 subsidy amounts formed the basis of our consideration. Therefore, although we will take into consideration the revised amounts in terms of our assessment of the impact of HIV/AIDS on the implementation of the Housing Policy, this consideration will not necessarily reflect the empirical reality of the Policy's implementation to date.

In terms of implementation, the policy sets out specific roles for the main sectors. Essentially the government is seen as the funder and regulator, the private sector is

the doer or implementor and the beneficiaries are generally a fairly passive recipient. This institutional framework is largely a product of its time- formulated on the eve of the demographic transition, were scale and speed of delivery took primacy over more qualitative and development concerns of housing development (see Annexure 1). As such, the early years of the implementation system saw the emergence of institutional and financial mechanisms geared to support the private sector operators (often large developers and civil and construction contractors), often at the expense of smaller operators and civil society.

The delivery role support needs of the latter are only now receiving attention, following a substantial waning in the interest of the private sector role-players in the face of declining profitability. Importantly, interviewees noted the significant slow-down that has occurred in the number of houses being built annually basis since 2000.

Housing subsidy funds are allocated to Provinces, who in turn allocate subsidies to approved projects, in consultation with municipalities and municipal housing plans.

The subsidy funding and allocation process is as follows:

- A share of the national budget allocated to housing is identified during the annual budgetary process.
- The share allocated to housing is then spread among the different provinces according to agreed criteria such as population size, and housing demand, as well as strategic factors relating to urban development policy.
- Provinces allocate subsidies to different projects according to the demand expressed in terms of “projects proposals” drafted by municipalities or housing developers.

Budgetary allocations are reviewed annually through the mechanism for multi-year planning called the Medium Term Expenditure Framework.

2.1.3 National priorities

The National Department of Housing (DOH) has identified specific areas of priority in terms of the implementation of the housing policy. In particular, the promotion of special needs housing delivery and emergency housing delivery are now explicitly provided for. Secondly, DOH has prioritised access for households earning less that R 1500 per month. Finally, and particularly relevant to the research process, the Department has identified the promotion of women in construction as important. Proposals have included the introduction of quotas to this effect, to be defined and implemented by provincial housing departments.

2.1.4 Housing Policy Review

Although the current policy framework is likely to continue guiding implementation for at least the remainder of the current Medium Term Expenditure Framework period, while committed projects continue, there are clear indications that significant shifts in policy implementation are imminent.

A national policy review exercise is currently being done by the DOH.
Salient features of the Review’s proposals include:

- A shift in implementation approach from supply-driven to demand-driven processes;
- Greater involvement of beneficiaries and small contractors in the construction process, away from developer-driven processes;

- A reduction in the scope of benefits to be accessed from subsidy amounts to prioritise access to land, secure tenure and services, and facilitate incremental construction of top structures;
- Promoting medium density housing development, and institutional housing solutions for those households who are able to afford housing products and financial commitments associated therewith, to ensure more integrated settlement patterns;
- Promoting beneficiary contributions to the costs of development through equity participation (either sweat equity or savings);
- Investigating financing mechanisms that provide for a package of contributions, by leveraging equity contributions, subsidies and lending finance; and
- Suggesting the need to envisage support measure for housing development that fall beyond the ambit of subsidisation.

These proposals are examined in greater detail in Annexure 2 in this report. Importantly, they signal a critical redirection of the manner in which housing development has taken place over the past six years, away from a "delivery-driven" approach towards a localised development process, where beneficiaries are key role-players.

Importantly, these directives are also being introduced through the provinces in terms of the formulation of Provincial Housing Development Plans and budgetary allocation to provincial programmes and implementation support interventions. A number of provinces are prioritising the allocation of subsidies according to different types of subsidy options, either in the spatial location of housing subsidies in their area of jurisdiction or the type of housing development which subsidies should be used for. In this respect, a marked shift has been noted at provincial level. This shift has seen proposed increases in budgetary allocation to incremental housing delivery[5] and to institutional housing. These increases have been matched by a decrease in the allocation of budget for project-linked housing products where the subsidy is used to develop a package comprising of a serviced site, with individual ownership rights and a rudimentary top-structure, usually by a private sector developer. Now, the approach is more incremental, where land and secure tenure are developed first, then services, and finally a top structure. This approach also favours the People's Housing Process for the development of top structures

2.2 Unpacking the conceptual framework: What are the supply systems for state assisted housing development

The term "supply system" refers to typical housing development processes for the delivery of state assisted (subsidy) housing. Subsidy housing is not provided through only one system but in fact through three main supply systems. Each system has its own variations which affect the housing supply process, the economic logic of the system, the costs of production, the management system and risk factors. For these reasons, and in order to provide baseline data, it is necessary to understand each of the three systems. The three systems are:

- **The developer/contractor supply system**

[5] Firstly land and secure tenure is provided, then services, and finally a top structure is developed over a number of years - generally by favouring the People's Housing Process for the development of top structures

This system operates primarily according to a commercial logic of profit maximisation and will seek to mitigate financial risk. To date, this system has held the greatest share of the subsidy housing supply environment. Typically, it has been driven and controlled by private sector operators who have generally specified both the process and outcomes of the supply system, from the initiation and identification of specific projects, to land acquisition and planning, the servicing of sites and the development of top structures.

- **The People's Housing Process (PHP) supply system**.

This system has been singled out because of the high level of management and process flexibility which it provides. Also, subsidy beneficiaries play a driving role in the supply process. The PHP supply system, unlike the developer/contractor supply system, is more concerned with product and process maximisation. Although it represents a small proportion of housing development to date, this supply system has been identified as a significant delivery mechanism for future housing development. Finally, a number of green-field sites have been developed though this process, notably, by the Homeless People's Federation

- **The Institutional housing supply system**.

This system has been singled out because of the continued financial and legal obligations of the subsidy recipient institution after project implementation. It also enables the use of a financial vehicle that facilitates the leveraging of additional financial resources to the subsidy amounts, thereby allowing for the construction of housing products of a high financial value. This housing supply system has only formed a relatively small proportion of the overall housing delivery to date, but it is poised for growth under the revised national policy.

By detailing these supply systems, we will establish a baseline to explore and measure potential impacts of HIV/AIDS. In the following sub-sections we will examine the manner in which these three systems interface with the subsidy scheme, the different components that comprise them, who the delivery agents are within the components and some of the costs associated with the delivery agents. The data generated in the process provides data inputs to the demographic and economic modelling activities to be undertaken in a later part of this study.

2.2.1 Subsidy schemes applicable to the three supply systems

The term subsidy-schemes refers to the specific schemes developed in terms of the government's Housing White Paper which are used to regulate, manage and finance housing supply systems, and which are relevant to this research. This includes:

- The project-linked subsidy;
- The consolidation subsidy;
- The institutional subsidy; and
- The credit-linked subsidy.

The subsidy schemes although framed in terms of national programmes are institutionalised and managed by provincial departments of Housing. In practice this means that the rules and systems applicable to the awarding and management of subsidy amounts can be provincially specific, although the funding limits are set nationally. In particular, three aspects relating to the provincial role in relation to the subsidy are important:

- The awarding of project proposals and approval for subsidy allocation;
- The rules applicable to the number and content of draw-down payments in relation to the progress of housing development projects; and

- The regulations applicable to minimum and maximum cost of specific components such as land, services and the top structure.

In practice, the supply systems can draw on different housing subsidy schemes, save for the institutional housing supply system which is primarily limited to the institutional subsidy. Although the developer/contractor supply system can make use of other subsidy mechanisms, in practice, it mainly operates with the project-linked and the consolidation subsidies. One of the key features of the PHP supply system is that it operates in a highly flexible and variable manner, and in practice each project can draw on any type of housing subsidy scheme.

The table below represents graphically the relative importance of each subsidy scheme in respect of each supply system. Different intensity of colour and the use of single or double ticks signal the relative importance of each component.

Table 1: Supply systems and the subsidy schemes

	Subsidy scheme			
Supply system	Project-linked subsidy	Consolidation subsidy	Credit-linked subsidy	Institutional subsidy
Contractor/developer supply system	✓✓	✓	✓	✓
People's Housing Process	✓	✓✓	✓	✓
Institutional Housing System				✓✓

2.2.2 Financial frameworks affecting the supply systems

A key factor influencing the development of housing products in post-apartheid South Africa has been low household affordability. For the purpose of the study, the definition of the term "low-income housing" refers to state-assisted housing products valued at less than R100 000, in other words, it is housing which households earning less than R5 000 per month are presumed to afford. Given the current income profile of the those eligible for housing subsidies, most low-income housing delivery has yielded housing products and processes, targeted specifically to cater for those earning belowR3 500 per month. Interviewees also explained that in the below R100 000 value band, two value bands are not provided for, the first being the R20 000-R40 000 gap, and the R75 000 to R100 000 gap. They linked this situation to a number of factors including:

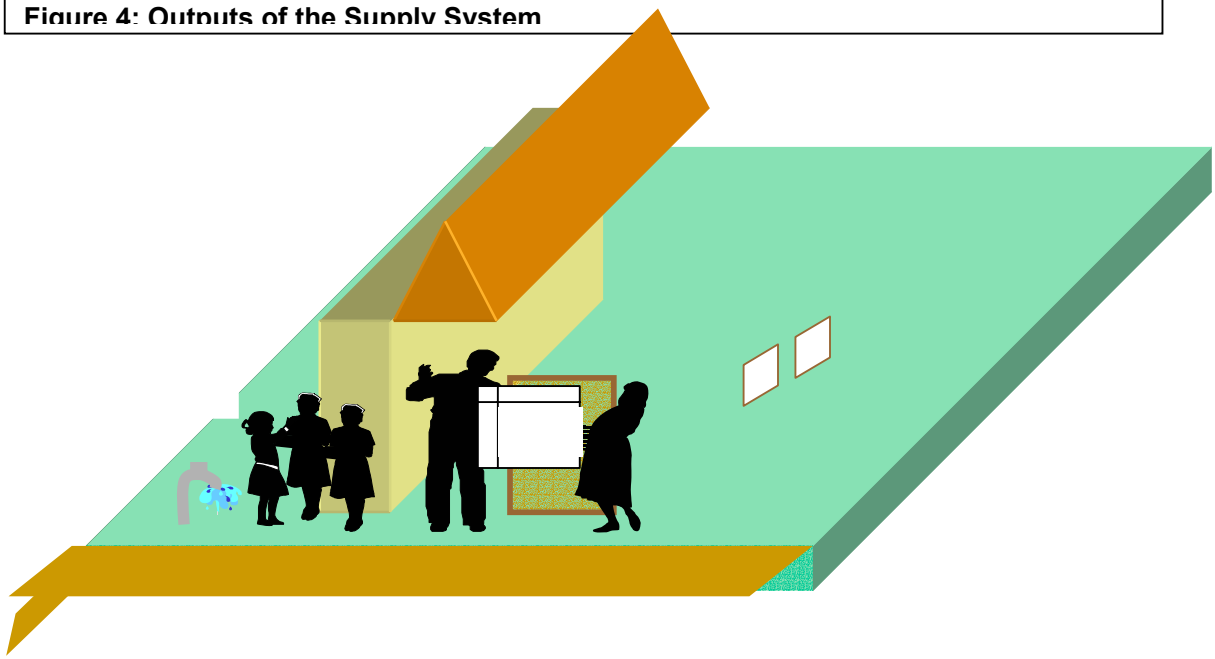
- The lack of a formal secondary market for the purchase of such housing stock;
- The high costs per unit linked to sourcing and managing loans for housing products valued at less than R 40 000;
- The locational dynamics affecting land markets in relation to household affordability.

By and large, the financing of housing supply systems falls within the ambit of subsidised housing. Financial mechanisms that augment the input costs for housing development (i.e. small loan products) have been inaccessible for the overwhelming majority of beneficiaries of state assisted housing, to date.

2.3 Unpacking the supply systems: Typical components

The term component refers to elements of the supply system that contribute to the operation of the system. Components were identified to disaggregate the housing supply systems so that the impact of HIV/AIDS can be defined for each component. Although variations exist in terms of the nature and relative contribution of each component to a system, typical features of each and relevant variations in practice are identified.

Figure 4: Outputs of the Supply System



The components are presented below, together with a graphic representation of the delivery agents who perform a role in each component. Different background colours are used to emphasise where a specific delivery agent experiences an intrinsic vulnerability outside of any consideration of demographic and economic HIV/AIDS impacts. These are shaded in orange.

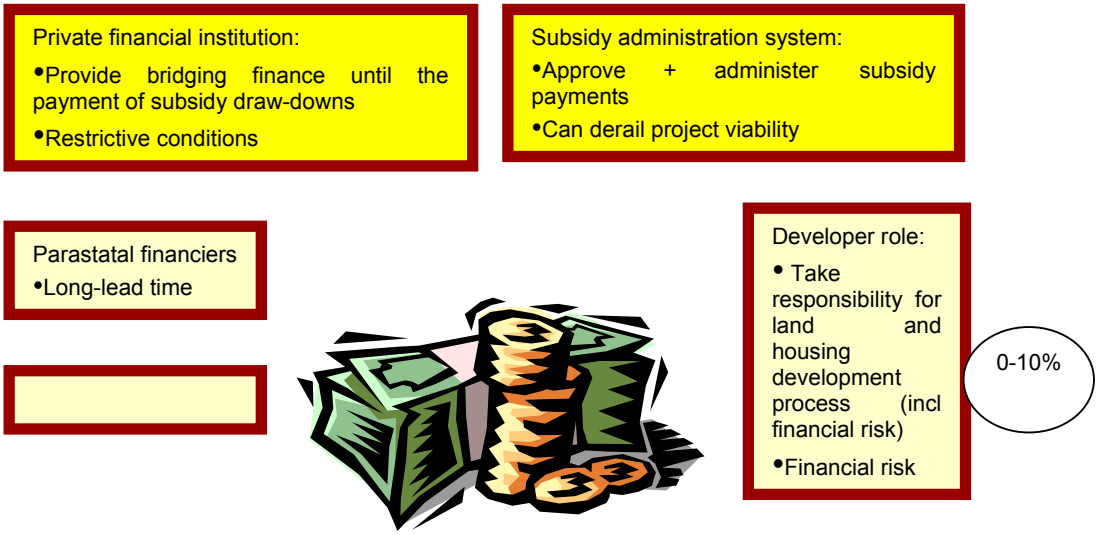
2.3.1 Bridging finance component

This refers to the availability, terms and conditions under which bridging finance mechanisms are made available to delivery agents to execute their own contribution to the system or to procure other components.

In practice, the bridging component has been extremely influential in making possible housing development in the subsidised environment. Because bridging finance is necessary until subsidy payments begin to flow, the manner in which the subsidy system is administered and regulated in each province has an important bearing on the cost of finance and the financial feasibility of housing projects. Indeed, if fewer subsidy payments are made and if the time taken to pay out the subsidy after a milestone had been reached is long, the higher the interest borne by the loan holder.

Furthermore, the conditions under which different types of delivery agents secure bridging finance can vary tremendously. For instance, large developers and contractors have been able to source bridging finance either internally, or from mainstream financial institutions under fairly favourable lending conditions. On the other hand, smaller role-players have to source support primarily from dedicated parastatal or private institutions at much higher interest rates. This has meant that, in practice, the cost of the bridging finance component has been higher for the latter type of delivery agent. Typically the cost of bridging finance varies from 4 to 7% of the total costs incurred to the subsidy.

Figure 5: Bridging Finance Component



2.3.2 End-user finance component

This refers to the **availability, terms and conditions of financial resources on a loan, mortgage or other basis to beneficiaries**.

This component, although seldom featured in the majority of housing projects delivered to date, is now primarily secured as part of the institutional supply system. In this system, it is made available to housing institutions, rather than directly to the beneficiary of the housing product. This approach means that financial risk is not directly attached to individuals but to a group of beneficiaries represented by an institution. A few housing projects have made use of the credit-linked housing

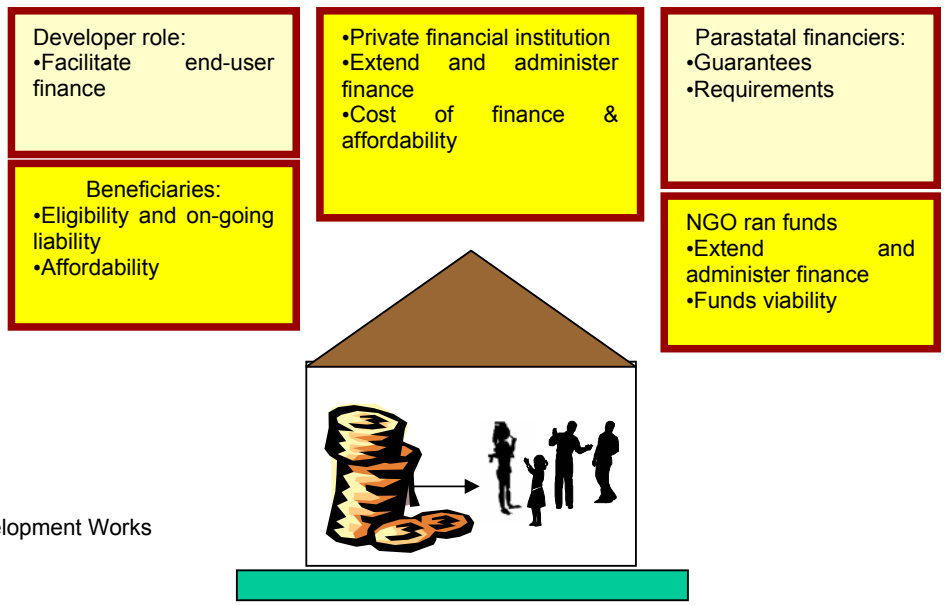
subsidies. Typically, these are related to employer housing initiatives. Some PHP models, notably that developed under the Aegis of the Homeless Peoples Federation (HPF), provide for some form of end-user finance packages. The proportion of the amounts accessed by means of such packages in relation to the total cost of the housing produced, tends to be minimal and generally does not exceed 5% of the total cots.

To date, the manner in which the repayment system has been articulated for end-user finance has been three-fold:

- In the case of the institutional supply system, the loan is held by the institutions, to which users of the housing stock owned by the institution make ongoing financial contributions. These financial contributions vary according to the tenure form being granted (from rental, rent-to-own, instalment sale, co-operative tenure) and can take the form of rental, instalments or monthly contributions. Yet, the liability for the repayment of the loan is held directly by the institution. Guarantees on loan amounts typically only cover 20 to 70% of the total value of the loan.
- In the case of credit-linked housing, repayment systems are directly related to the beneficiary, mostly in the form of payroll deductions (typically not exceeding 25% of employee income). Guarantees are held in the form of pension or provident fund cessions.
- In the case of the PHP system, small loans are granted over a short period of time and are generally conditional on prospective beneficiaries establishing a regular savings record. Depending on the institution facilitating access to end-user finance, repayment can take the form of fixed repayments over a variable period of time, variable repayments over a fixed period of time, or variable repayments over a variable period of time.

In terms of the institutional housing supply system of credit-linked housing, typically the value of the end-user finance contribution to the cost of production of the housing stock (between R 40 000 and 65 000) exceeds that of the subsidy. As such the cost of end user finance is not borne directly by the subsidy. However, it remains important to consider as a component of the supply system, because it forms the financial basis upon which the construction of new housing stock is dependent.

Figure 6: End-User Finance Component



2.3.3 Land assembly and planning component

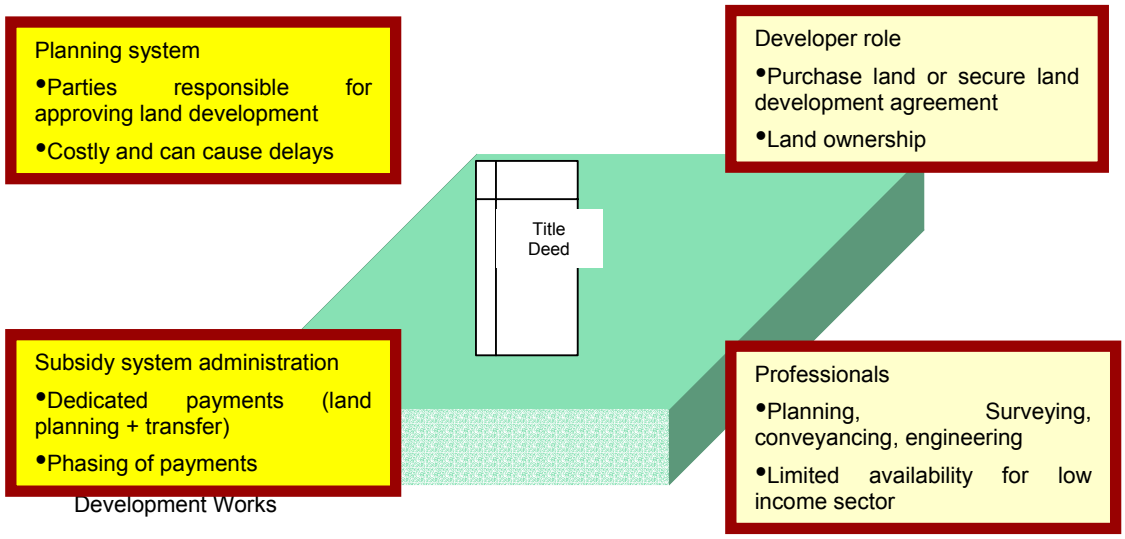
The land assembly and planning component refers to the **process of identifying suitable land for housing, securing the development rights or purchasing the land from its owner, undertaking land development applications and other physical planning activities, as well as ensuring all tenure arrangements**.

This component is a key factor impacting on the success or failure of housing projects and processes. Because land availability is affected by factors such as geophysical conditions, land markets, land ownership and urban form and identifying suitable land at an affordable cost to the subsidy has often proved to be an obstacle to development, especially in provinces such as KwaZulu-Natal, Gauteng and the Western Cape. There, suitable land is not only in short supply, but the cost of the land is prohibitive. In addition, the process of securing land is affected by who owns the land. Generally, municipal-owned and privately owned land tends to be easier to acquire. On the other hand, land owned by a range of Provincial and National department are more difficult to secure timeously. These considerations affect the outright cost of land. Importantly, given the limits of the subsidy that may be apportioned to land, this element has an important impact on the financial viability of projects.

Similarly, the planning process has been identified as a significant consideration affecting the financial viability of housing projects. The planning process bears outright costs (related to specific activities required to obtain township establishment and the registration of rights in the name of beneficiaries), and delays impact directly on the project. It is important to note that the planning system, although undergoing significant overhaul, is identified as an area of intrinsic weakness in the process of housing delivery. Overall institutional capacity and efficiency affect township establishment approval and proclamation and the registration of rights. These were identified by the case studies and the national and provincial interviewees noted a concern regarding this capacity.

Typically, the land assembly and planning component amount to between 10% and 15% of the subsidy amount. However, because it affects the extent to which other activities can be performed timeously, delays or obstacles in this component have a knock-on effect on the cost of other components to the subsidy.

Figure 7: Land Assembly and Planning Component



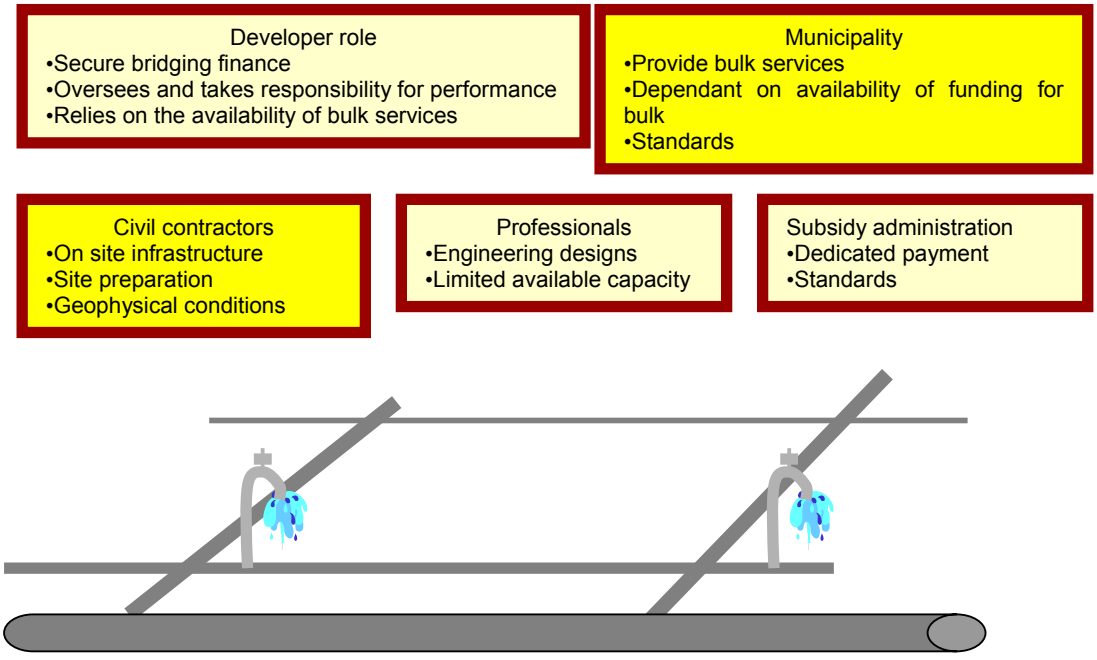
2.3.4 Services component

The services component refers to the process of site preparation, services design and implementation as well as securing services approval (as part of the planning process) from municipalities.

Overall, the later activity was identified as an area of intrinsic weakness. It is affected by two factors. These are the services standards set by the municipality (or even the province) which have an direct cost to the project as well as an ongoing cost to the subsidy and the municipal service provider and the availability of bulk infrastructure to meet the additional demand accruing from new users. These considerations vary between different provinces and municipalities. For instance, in Gauteng the minimum service level is full waterborne sewerage and metered water connections, whereas in the Eastern Cape because of a maximum limit on the amounts to be spent on servicing sites, service levels tends to be lower.

Other factors affecting the cost of services include geophysical conditions and whether the development is a green-field or *in-situ* process. These can increase the cost of implementing services between 30% to 50% of the subsidy amount. Finally, most site preparation and site servicing activities tend to be more capital than labour intensive and with limited involvement from beneficiaries in the form of labour. In the case of the PHP supply system, this component tends to be under-stated, as most PHP processes to date have occurred on site-and-services schemes developed under the previous political dispensation.

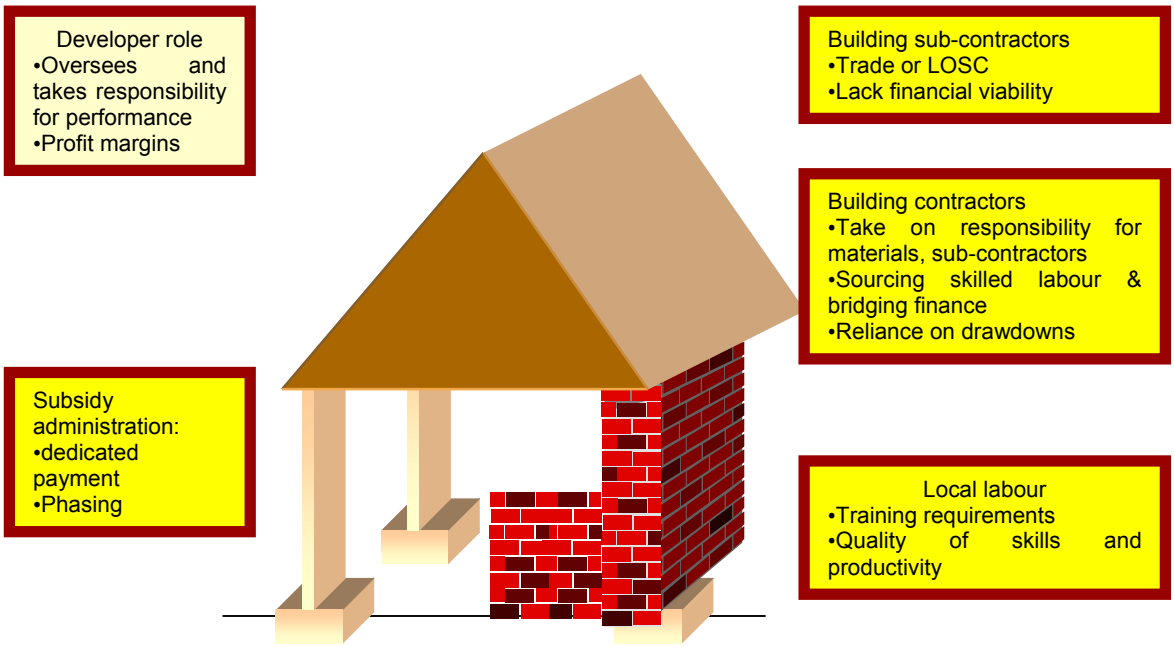
Figure 8: Services Component



2.3.5 Top-structure component

The top structure component is the actual construction of the housing product.

Figure 9: Top Structure Component



Depending on the supply-system, different outputs are yielded from this component. Typically, the developer/contractor model yields fairly standardised products, having to conform to minimum norms and standards set by the National department of Housing.

Since the introduction of the National Home Builders Registration Council's (NHBRC) requirements, the cost of supplying a housing product has increased by between R2 400 - R3 400 (depending on geophysical conditions), or an additional 10-20%.

The PHP process, operating within the same subsidy amount, does not have to abide with such minimum norms and standards nor the NHBRC requirements. The institutional housing product, by enabling the leveraging of a range of additional financial contributions to the subsidy amounts is characteristically designed to reflect preoccupations with aesthetic design, safety and durability.

The specific organisational structures and processes set up to implement the delivery of top structures differs according to the different supply systems as follows:

- Developer/Contractor supply system

The developer appoints a main contractor responsible for overseeing the construction process, sourcing and managing materials and managing labour-only

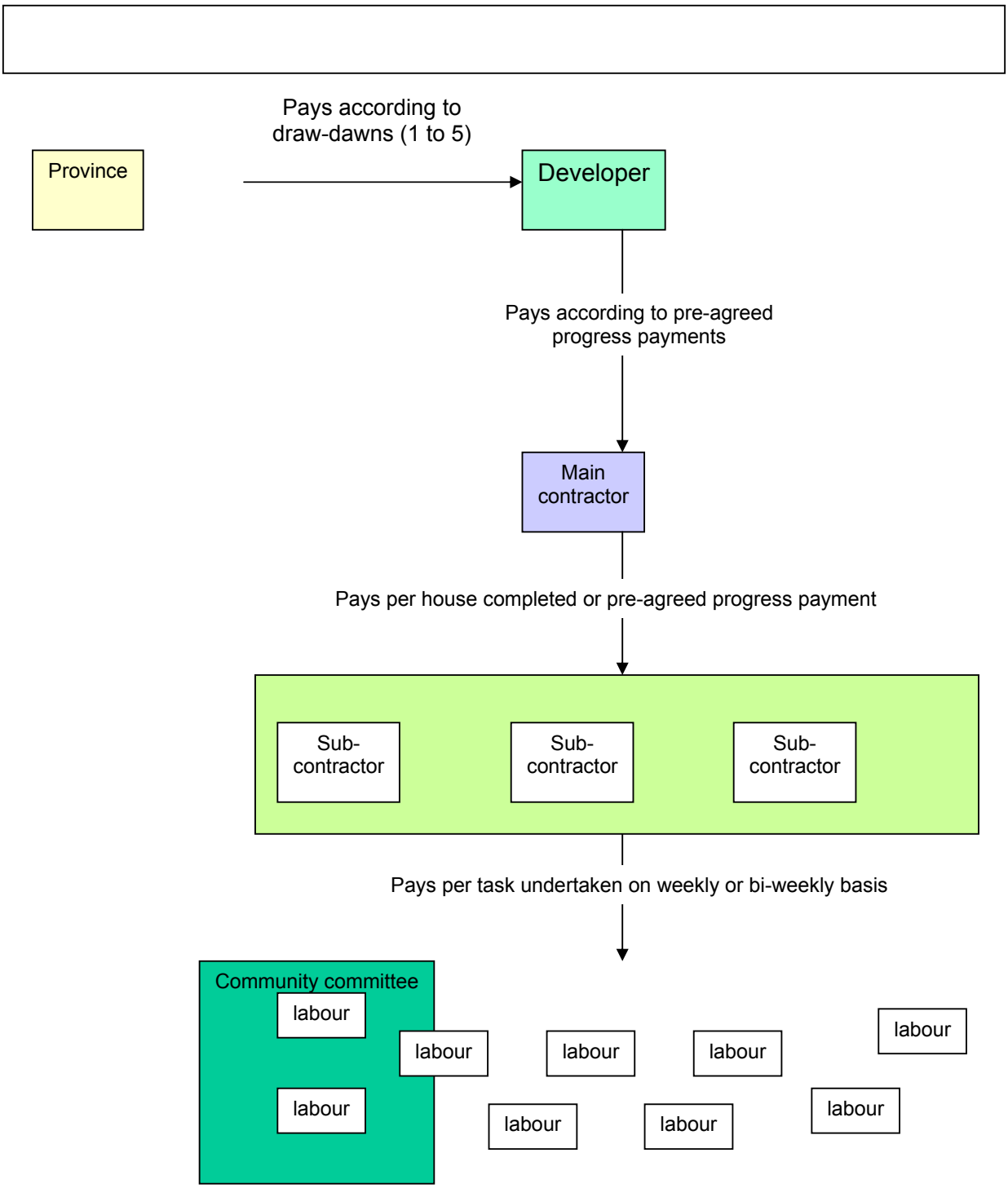
sub-contractors. The developer (whether a private organisation, a municipality or a not-for-profit organisation) is paid in drawdowns for the completion of specific milestones (ranging from 1 to 5 for the top-structure).

The main contractor appoints sub-contractors either on a trade basis (i.e. bricklayers, carpenters, and plumbers), or to take responsibility for the construction of specific groups of erven in the development. National, case study and provincial interviewees reflected that the latter approach is preferred as it overcomes compounded delays which may arise should one of the trade-based contributions not deliver on time. The main contractor is paid by the developer based on pre-agreed milestones in the project as a whole, or when drawdowns have been paid to the developer.

Sub-contractors then recruit labour, from the beneficiary community or from nearby communities and tend to pay them per house completed. Labour is paid per task completed (i.e. square metre of wall, number of trenches dug, etc) on a weekly or biweekly basis.

Typically, a community committee is set up to input into the procurement of labour and to input into decisions pertaining to matters such as the design and orientation of housing products and layouts, as well as eligibility and access of beneficiaries.

This system means that most of the financial risk associated with bridging finance, is held either by the developer or the main-contractor or both, and to a very limited extent by the labour-only sub-contractors.



- PHP supply system

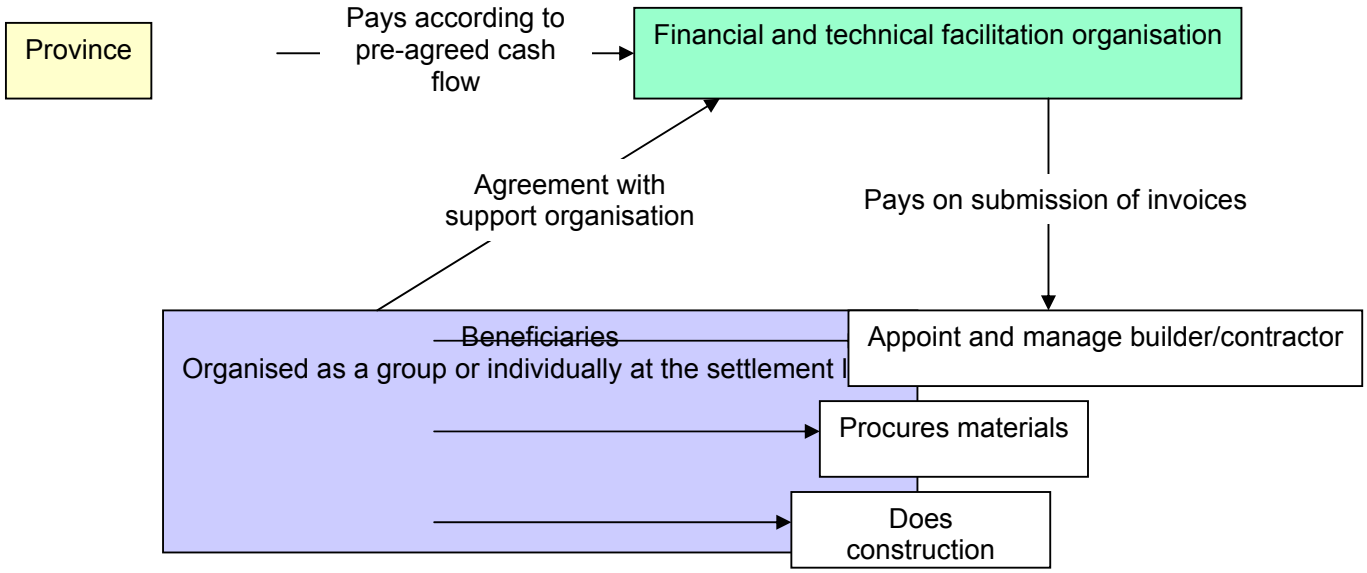
An organised community appoints (directly or indirectly) a project facilitation organisation (which can be a Trust, a municipal department, a non-governmental

organisation, or a provincial housing support centre), to act as a recipient of housing subsidies, a technical support provider and/or a labour and materials broker. The subsidy amounts are forwarded to the institution performing the financial facilitation role, and are then disbursed based on the presentation of invoices for labour and materials.

Because of the flexibility of the system, the beneficiaries can opt to approach the construction process from a range of process options - by undertaking the construction activities themselves, by appointing trade-based artisans, contractors or a combination of the above. Similarly beneficiaries can opt to source materials themselves or to source them from provincially approved suppliers or to let contractors provide them.

Importantly, in this system three areas of skills and contribution are particularly important, financial, technical and process facilitation.

Figure 11: PHP supply system construction process



- The Institutional supply system

Historically, this system has required the setting up of dedicated housing institutions to own and manage the housing stock for a period of at least four years after the completion of construction activities.

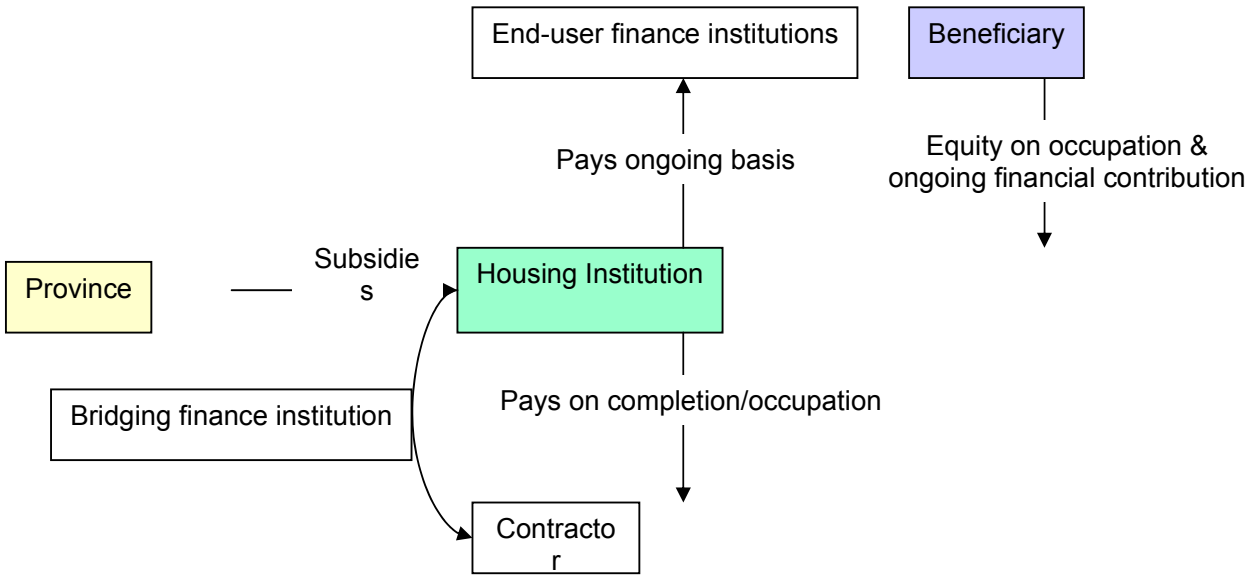
Delivery agents such as non-governmental organisations and municipalities set up such institutions. The institutions source bridging finance and guarantees (in particular from dedicated parastatal organisations), and appoint a developer/contractor to undertake the construction process.

Typically, because of the high quality specifications which such products require, professional contributions from specialised architects and urban designers are necessary. The skills levels required in the implementation process has to meet the

quality specifications for the product, which signifies in practice that little, if any, opportunity for employing local labour exist.

As the housing stock is delivered, the housing institutions source prospective beneficiaries, who have to apply for subsidies. Upon occupation of the housing units, beneficiaries have to begin making ongoing financial contributions as well as an initial equity contribution ranging from R1 000 to R5 000.

Figure 12: Institutional supply system's top-structure construction process



2.3.6 Materials sub-component

Materials are treated as a sub-component of the top-structure component. **It comprises the manufacturing, transport, wholesale and retail of building materials.**

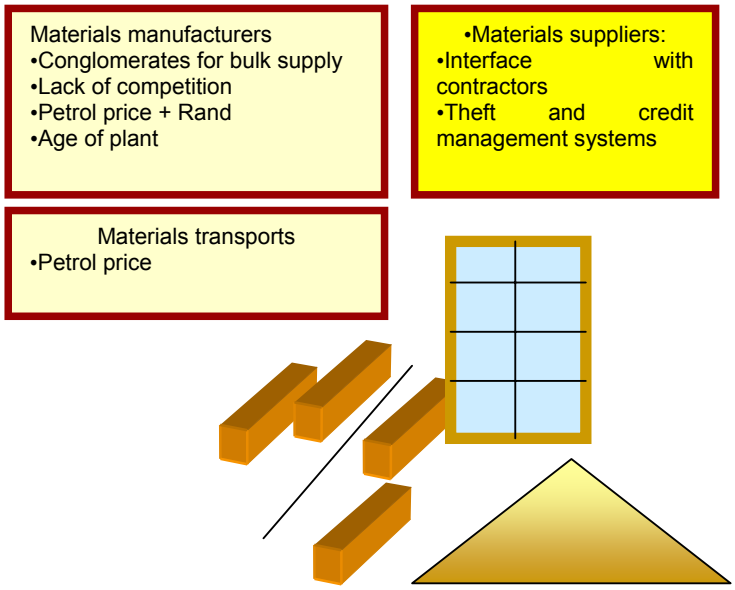
Building materials typically include, cement and cementous products, clay products, metal products, wood products and sand. Typically, there is a direct relationship between the price of materials and the price of labour in respect of the top structure. In the low income-housing sector, the bulk of the cost of the top-structure is due to the materials.

The production price of materials is highly vulnerable to changes in the price of petrol. Escalation costs on the price of materials is calculated on an annual basis, and can be built into the price of tenders and contractual agreements. However, interviewees explained that price increases routinely exceed the escalation rate[6] Other relevant factors affecting the proportion of the cost of materials to the total value of the housing product, and in turn the cost to the subsidy (between 30% and 45%) include:

[6] Although the JBCCCPAP formula provides for an average year on year escalation of 7,5%, this is seldom a reflection of real increase. For instance, the average rate for 2001 stood at close to 6%, however the price of bricks increased by 20%

- The spatial location of a housing project (which affects the cost of transport);
- The purchaser of materials, as suppliers tend to have differential pricing structures for different types of role-players (providing advantageous credit facilities, discount and supplying transportation for large operators only); and
- The levels of specification in terms of quality and finishes, as well as the size of the housing structure.

Figure 13: Top Structure Component



2.3.7 Housing management component

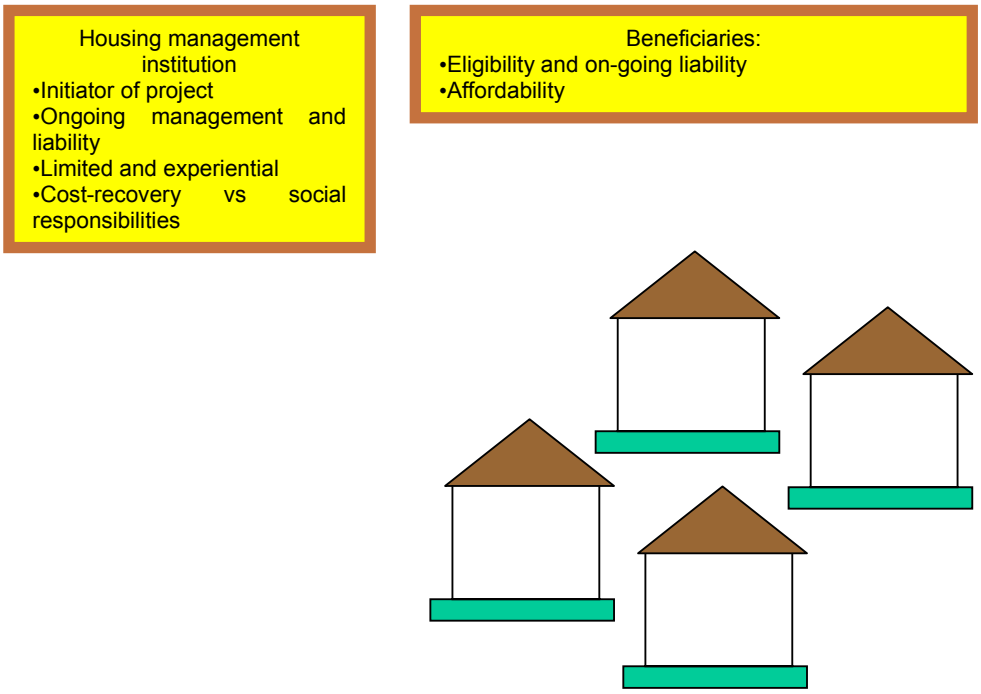
This term refers to the post-housing development function performed by the institutional supply system and subsidy scheme.

In institutional housing delivery, the housing management institution has to manage, maintain and administer the housing stock. This all incurs costs.

Although the models under which institutional housing is developed vary, the underlying tensions between - on the one hand, providing a social development and support role to beneficiaries, and on the other, ensuring cost-recovery to sustain their financial viability is one of the systemic weaknesses of this component. This weakness is also affected by the extent of beneficiary involvement in decision making in the institution. Finally, because this components fairly in the South African context, their organisational and structural characteristics are only emerging and often experimental.

Although considerable donor and international organisation support has been made available to support housing management institutions and their parent NGO, the skills base required to operationalise and manage them, are in short supply.

Figure 14: Housing Management Component



2.3.8 Section summary

Table 2 below summarises the different contributions of the components to each supply systems and provides a guideline of the proportion of the cost of these components to the cost of production in the different supply systems.

Table 2: Supply systems and the contributions and relative costs of the components

	Component														
Supply System	Total unit cost	Bridging finance		End-user finance		Land-assembly and planning		Servicing sites		Top-structure		Materials		Housing management	
D/C	16000-18400	✓	5%	✓		✓	10-15%	✓	35%	✓	20%	✓	30%		
PHP	7500-18400			✓		✓		✓		✓	25%	✓	75%		
Institutional	35000-75000	✓	4%	✓	15%	✓	4%	✓	20%	✓	22%	✓	35%	✓	Cost recovery

The above components are typical components of all supply systems, but their respective contribution and related cost to each system may differ. Accordingly, their vulnerability to HIV/AIDS economic impacts will also differ, resulting in different implications for the three supply systems. The table below summarises the extent to which the different components contribute to each supply system and provides an average percentage of the cost in relation to the final cost of the housing unit of each component.

2.4 Unpacking the components: What are the typical delivery agents involved in the supply systems and their economic interests

Delivery agents are the specific organisations that perform a role in contributing to the different component of the housing supply systems. They include private organisation, non-governmental organisations, governmental institutions, labour and beneficiaries.

The following section examines the range of delivery agents active in the different components, by specifying the nature of their contribution, their organisational characteristics, the manner in which they relate to the various supply systems and, where applicable, their intrinsic vulnerabilities.

2.4.1 Bridging financial institutions[7]

Bridging finance institutions range from corporate organisations such as the African Contractors Bank, to parastatals such as NURCHA (who has contributed to the delivery of 250000 units to date) and not-for-profit organisations such as the Utshani Fund (although it is targeted at the end-user).

[7] Three bridging finance organisations have been approached as part of the research, to date.

Large construction and civil contractors can access bridging finance from mainstream commercial institutions. These organisations target specifically contractors and developers. Although the financial facility of the Utshani fund targets the end-user, in the PHP supply system in particular, the financial mechanism is primarily geared to be used as a bridging finance mechanism for a beneficiary to initiate the construction process until his or her subsidy is approved and disbursed.

The proportion of the equity covered by bridging finance depends on the nature of the lending organisation, as well as the terms affecting the interest rates, the duration of a loan and the eligibility criteria. For instance, organisations such as the African Contractors Bank require minimum projected profit margins, to assess the viability of projects. Additionally, in assessing risk levels, for the purpose of setting interest rates and other lending terms, financial institutions tend to be prejudiced against small operators. Importantly, the organisations contacted expressed concern at the high number of applications which they receive which do not meet this criteria. Similarly, concern was expressed by both private and parastatal organisations at the increasing levels of defaulting on bridging finance repayments. They attributed this state of affairs to five key factors:

- The general economic slowdown and the after effects of the 1998 interest rate surge;
- The slump in the construction sector and the low levels of investment in construction;
- The decrease in the real value of the subsidy which contractors have to deliver to meet increased expectations in terms of the minimum norms and standards;
- The lack of business management and infrastructure available to small contractors active in the low income housing sector; and
- The lack of efficiency of provinces in awarding and administering housing subsidies.

The last factor was identified as particularly problematic, as it affects the length of time during which bridging finance is being held and therefore the financial viability of projects.

In the course of the case studies and the provincial interviews, to date, we have noted that a significant proportion of contractors and developers do not rely on bridging finance facilities. This stems firstly from the fairly limited accessibility of such facilities to small operators. Interviewees also explained that the financial risks associated with taking a bridging loan, and the cost of such facility was too high to be accommodated within the limited profit margins achievable in the sector. However, this situation limits the extent to which contractors and developers alike can take on new projects; thereby slowing down the implementation of the Housing Policy.

2.4.2 End-user finance institutions[8]

Only a handful of end-user finance institutions participate in the supply of low-income housing. Such institutions range from corporate organisations such as Southfin, to parastatals such as the Home Loan Guarantee Company (HLGC), the National Housing Finance Corporation (NHFC) and NURCHA and not-for-profit institutions such as Utshani Fund and the Khayasa Fund.

Although efforts have regularly been made to secure a greater involvement of financial institutions in the delivery of low-income housing, to date, the extent to which such facilities have been made available, has been limited, and is mostly applicable in the Institutional supply systems. A handful of developer/contractor

[8] Four end-user finance organisations have been approached as part of the research, to date.

housing projects have experimented with micro-lending arrangements. Overall, one of the key characteristics of such organisations is their concern for minimising and or managing risk. The South African experience of bond boycotts and the near impossibility of re-possessing property, mean that end-user finance institutions are particularly uninterested in the low-income market. In Gauteng, for example, financial institutions possess close to 20 000 properties, which makes them wary of extending finance to a market which cannot afford their financial products. By seeking to share risk between different operators, and interacting on a regular basis with loan-holders, such organisations attempt to shelter themselves from default. However, the institutions approached all noted an increase in the default rate of loan-holders and beneficiaries (where the housing institution acts as an intermediary). They attribute this situation primarily to the current economic situation, and increasing levels of unemployment, although some interviewees indicated that HIV/AIDS may be having a household economic impact. A research team has been set up by the Financial Institutions Task Team to assess the possible impacts of HIV/AIDS on their interests.

2.4.3 Professionals[9]

These delivery agents are active in the land assembly and planning activities, as well as design of services and top structures. Typically, they include land surveyors, town planners, structural engineers, consulting engineers, architects, quantity surveyors, and conveyancers.

They operate either as part of dedicated consulting firms, or as part of NGO housing support teams, or are linked to large contractors and developers (this is decreasingly so). The involvement of large consulting firms such as Africon, and Urban Dynamics in the low-income housing sector is decreasing noticeably. Similarly, downsizing is a current trend affecting the sector, and increasingly, private sector professionals are operating as individual consultants. Dedicated NGO's, such as Planact or the Built Environment Support Group (BESG) have some in-house professional capacity but constitute a minority in the market. Professionals whose contributions are specified in terms of contractual arrangements tend to be negatively affected by delays occurring in the development process. However, given that their costs are often calculated on a cost-per-unit basis (in accordance with professional bodies' guidelines) their profit margins can be substantial for large-scale projects.

2.4.4 Developers specialising in the low-income housing market[10].

What distinguishes the role of developer from other delivery agents is that the developer is responsible for the overall implementation of the project, including the financial risk-taking in the supply system (in particular by securing bridging finance).

Although during the 1990's numerous large developers dominated the low-income housing market, today they have almost entirely left the market. Those still active are only finalising existing projects. For example, the low income housing section of LTA/Grinaker boasted a staff complement of close to 70 employees until 2000. Today the four remaining employees are merely winding down committed projects.

[9] Most professional bodies for the built environment were approached in the course of the research. In addition, close to 35 professionals (ranging from quantity surveyors to planners and project managers) were approached in the research to date. It is important to note, that a significant proportion of developers are also built environment professionals, or comprise such professionals in their organisations.

[10] Close to 20 developers were approached as part of the research, ranging from established nationally-active developers, provincially active developers and emerging developers.

Similar organisations have opted to divert from the low-income housing market, in favour of other more profitable and secure areas of work, in the commercial, hospitality and industrial sectors, within and outside South Africa. Typically, such organisation's operational advantage within the supply systems has been their ease of access to bridging finance to facilitate speedy delivery at scale. Since their departure from the market, three types of organisations acting as developers are most common:

- Regionally active property development closed-corporations manned by an extremely small human resource pool of up to ten permanent staff members (including two to four construction sector professionals). Typically there are between 5 and 10 such operators per province;
- Medium size civil contractors acting as developers such as Multi-focus, Gamont and Ubuntu. These operate mostly in support of incremental housing processes where the delivery of serviced sites is undertaken by a developer and the construction of top-structures follows the PHP process;
- Municipalities acting as developers by taking on most of the responsibility for sourcing and appointing contractors.

2.4.5 Contractors, sub-contractors and labour[11]

These refer to civil engineering and/or construction contractors responsible for the implementation of services (civil engineering contractors) and top-structures (construction contractors).

Most large construction and civil contractors have moved out of the market in favour of regionally based, medium-sized operations. Although there are clear signs that medium-size construction contractors are also redirecting their operations to more profitable construction sub-sectors, medium size civil engineering contractors continue to be fairly active in the market. Because civil engineering contracting is significantly more capital intensive that its construction counterpart, which shields the sector from factors such as local labour procurement requirements and restricts the number of players in the field, it has not been nearly as over-traded a sub-sector as the latter. Civil engineering contractors' in-house labour force comprises teams of highly skilled employees to operate plant and machinery. These teams are highly mobile and sought after both within South Africa and beyond its borders.

[11] In the research to date, all the construction sector labour unions were approached. Similarly, the National and the Provincial Master Builders Organisations, and the Building Industry Federation were interviewed. An attempt was made to interact with a representative organisation for emerging contractors and sub-contractors; however, this interaction was made conditional on some form of financial compensation, which was deemed inappropriate and may have compromised the integrity of the research process.
Further, whilst close to 450 telephonic interviews were sought, to date, with contractors (on the basis of three different directory sources compiled between 2000 and 2002), only 90 telephone numbers were still in use. Of these only 20 could be used as the basis for seeking out information relevant to the research, as the respondents had either left the low-income housing sector, left the construction sector, or their company had been liquidated within the last two years. The later point verifies information gathered in the course of the national interviews, in respect of the extreme precariousness of construction sector SME's. Throughout the research, to date, close to 60 contractors were interviewed, mostly in the course of face to face interviews. These ranged from large established contractors to "bakkie-builders" (1 person operations with a handful of permanent employees). Specific attention was given to engaging with women-owned organisations, in line with the Policy Implementation directives, which promote gender representation in the sector.

Construction sector contractors have undergone significant downsizing. The construction sector unions identified that most skilled workers, after a wave of retrenchments in the 1990s, are currently operating as self-employed contractors and labour-only sub-contractors, or are still unemployed. At the project level, contractors routinely sub-contract smaller operators to source additional capacity to that which they keep in-house. Typically, main contractors primarily comprise of construction managers, skilled and semi-skilled technicians. They are responsible for managing the procurement of materials (and even, at times take on the associated financial responsibilities), as well as the construction process itself. Increasingly, where municipalities act as the developer, contractors are required to take on a part of the financial risk normally associated with the role of the developer, as municipalities tend to lack such capacity.

Because of local labour procurement requirements, main contractors source sub-contractors from within the settlement area where housing projects are to take place. Sub-contractors are mostly single member closed corporations, operating at the settlement level, set up by former employees of larger companies retrenched in the wave of downsizing that has affected the sector over the last ten years. Although they may have trade-specific construction skills, their exposure to process management, and business management has been limited, which has made them extremely vulnerable to problems affecting the financial viability of each project. In addition, because of the small size of their operations, such role-players mostly operate as labour only sub-contracts, which limits the extent to which they may move up in the supply chain. Overall, sub-contractors, unlike their larger counterpart, have not led housing development; they have merely been brought into the housing development process once a project has been approved.

Importantly, because of the extent of over-trading among small contractors, many barely sustain themselves on turnover rather than profit. Construction contractors and sub-contractors have tended to take on work in a housing project where the expected profit margins are extremely tight, and without any form of contingency arrangement.

Sub-contractors, depending on the scale of a housing project, may go on to recruit even smaller firms or artisans responsible for sourcing, training and managing local casual workers for each site. This layered division of production units means that there is generally a loose connection between the contractors, sub-contractors and local labour on site.

Finally, interviewees identified key skill profiles at the project level required to ensure the smooth running of the construction process; these include:

- A foreman who is responsible for managing sub-contractor teams and materials;
- Semi-skilled workers responsible for overseeing sub-contractor teams and providing ongoing technical support and supervision; and
- Skilled workers and technicians to approve the quality of work done in terms of specific trades, such as the laying of foundations, the correct use of brick force, the laying of trusses, electrical and plumbing works.

Without the presence on site of these types of labour (generally employed by the contractors), as and when required, progress by the sub-contractors, and in turn contractors, becomes impossible and the labour teams mobilised are unable to operate.

2.4.6 Local labour[12]

Local labour in the sector refers to semi-skilled and primarily unskilled labour (primarily recruited from the beneficiary community or among the residents of nearby settlements).

Typically local labour is selected not by the contractor or sub-contractors but by a community committee responsible for screening labour. This situation was identified by all role-players interviewed as a significant hindrance, as it makes performance management and quality control more arduous. The developer/contractor case study in KwaZulu Natal, however, saw this situation as a desirable mechanism for avoiding some of the political conflict associated with setting up local labour teams, given high levels of competition. Among national role-players, however, interviewees expressed significant concerns at the cost of having to abide with local labour requirements (in particular in respect of the training activities)

At the project level, local labour is provided with basic levels of training at the onset of a project. Estimates of the extent of training for different contributions vary from project to project, from a few hours for a bricklayer[13], to a week's supervised activity for a general labourer**.** The cost of training a general worker was estimated, by interviewees, to be between R100 and R350. A further source of concern, was that even though labour is provided with training at the onset of a project, labour turnover on site is said to be high, and so is the incidence of labourers sending substitutes when they are unable to work on particular days. Interviewees explained that this compromises extensively quality control, even though the low levels of specifications in terms of finishes and materials facilitate the involvement of unskilled labour in the top-structure construction process.

Although local labour is drawn upon in the developer/contractor and the PHP supply systems, this is not so in terms of the institutional supply system, where the quality of finishes required of the housing product, prevents the involvement of much unskilled labour.

2.4.7 Beneficiaries[14]

Beneficiaries are involved in the housing supply systems in varying degrees and for different purposes. They can take on a role closely aligned to that of the developer in the PHP supply system, by being responsible for decision-making and management of the contractors and builders they appoint directly, and/or by sourcing materials themselves, and/or through sweat equity contributions. The KwaZulu Natal and the Western Cape PHP case studies stress the importance of both social cohesion at the community level for purposes of communal decision-making and social capital formation at the household level. The latter is particularly significant in that it takes

[12] In terms of the focus of the research, our concern was to engage with delivery agents who are able to consider the implementation of the supply systems from, at least, the scale of the construction of a whole house. This meant that local labour- who is employed on a casual and performance basis would not have been in a position to consider some of the key procedural financial requirements of the sector.

[13] This is made possible because of the low levels of specifications for the product. In comparison it is significant to consider that it normally takes between six to eight weeks to "qualify" as a bricklayer (one of the learning outcomes in this formal system is the ability to lay an arch).

[14] Given the focus of the research, engagement with beneficiaries was limited to the PHP case studies where the beneficiaries acted as delivery agents in the implementation process.

over some of the roles in the supply system performed by other delivery agents in the other supply systems. Their role, however, is also contingent on the availability of local leadership capacity within the beneficiary community, to facilitate community mobilisation and interface with more formal agents in the housing supply system.

In terms of the developer/contractor supply system the role of beneficiaries is primarily limited to inputting into:

- Decision-making processes in respect of the selection of housing products (within a limited range of choices);
- The submission of applications for subsidies (although these are often undertaken on behalf of the beneficiaries by the developer); and
- The screening and facilitation of access to local labour, and determining eligibility to housing projects of prospective beneficiaries.

Within these broad specifications, the involvement of beneficiaries has tended to be peripheral to the process. Although interviewees reported the necessity of ensuring that decisions reached in the committee are communicated to beneficiaries to avoid local level tensions. Importantly, in the developer/contractor supply system, a specific allowance is made for the role of beneficiary liaison, facilitation and administration (which amounts to between R200 and R300 per beneficiary). In addition, in terms of the project-linked housing subsidy, the payment for the top structure is contingent on transfer of the property to a qualifying beneficiary. This means that seldom can construction occur prior beneficiaries having been approved and the registration process having been satisfactorily undertaken. For a developer, this situation presents a risk, as absenteeism levels of between 5% and more recently 20% at the time of handing over of the finished top structure on a given project were mentioned by interviewees. This has the effect of "freezing" a site and its subsidy, as it prevents payment for the top structure to be made. Importantly, the highest levels of beneficiary absenteeism recorded in the research to date, were substantially more pronounced in those provinces where the HIV/AIDS pandemic is older.

This financial risk differs significantly in the PHP and institutional supply systems. In the latter, projects are mostly taking place in situ. This means that the risk of absenteeism as experienced in the Developer/Contractor supply system is not as obvious. However, the duration of PHP process, which typically is much longer than other types of processes (up to 6 years), raises the risk of beneficiaries' passing on before the completion of the top structure, thereby affecting the administration of the subsidy amounts.

In the institutional supply system, beneficiaries are only recruited towards the end of the actual construction process. Because ownership is not vested in the beneficiaries, the risk of subsidies being "frozen", as is the case in the other two systems is avoided. However, the ongoing financial contributions required of beneficiaries, and the legal tenure agreement linking beneficiary households to the housing institutions mean that the financial risk associated with the role of beneficiaries in this supply system extends beyond the construction process and the duration of the residence of beneficiary households.

2.4.8 Housing support Non Governmental Organisations[15]

These organisations are particularly involved in the PHP supply systems, where they provide technical assistance, including project management, training and facilitation

[15] Seven housing support NGO's were approached to date.

support to community members, as well as taking on subsidy administration functions.

They can take the form of Housing Support Centres, as in the Free State, dedicated housing support NGO's such as Planact, the Built Environment Support Group or People's Dialogue, or a range of municipal-linked support units. These institutions tend to be supported through donor funding in the form of a dedicated facilitation/start up grant so their cost is not generally borne by the subsidy. A large number of these organisations provide capacity on a project-by-project basis, although the People's Dialogue has a more nationally dispersed base of community networks grouping roughly 100 000 members under the aegis of the Homeless People's Federation.

Some of the institutional weaknesses affecting NGOs active in the low-income housing sector are not unlike those facing other NGO's, namely an ongoing brain-drain of personnel to the public and private sectors and the need to shift their functions from political activism and resistance to developmental, community-based support. This is particularly relevant to the manner in which such organisations struggle with the tensions between balancing a social development support role with the need for their actions to be financially sustainable and accountable.

2.4.9 Housing management institutions[16]

Organisations involved in the institutional housing system are legal entities that receive institutional subsidies and in which ownership of the housing stock (and the associated financial and legal risk) is vested for a minimum of four years after completion of projects. These institutions can take on a variety of legal forms, including Section 21 companies, co-operatives, closed corporations, communal property associations (CPAs) and Trusts. They also have varying degrees of financial and legal autonomy, and are often linked to an umbrella institution, such Cope Housing Association in Gauteng.

Housing management institutions have been set up to deliver housing in terms of the institutional subsidy. This has meant that most were set up within the last five years. As such, the extent to which they have been able to consolidate their experience and skills base has been fairly limited.

2.4.10 Materials producers

The manufacture and supply of materials is a highly monopolistic and centralised sub-sector17. There are three main cement manufacturers (Alpha, PPC and Lafarge) who operate along spatial monopolies. The materials suppliers interviewed, to date, noted with concern that this situation is not conducive to competition and leads to distortions in the cost of cementous products. Corobrik is the largest national brick producer and has a few regionally based competitors. ISCOR is the sole manufacturer and supplier for all structural steel products and metal roofing materials, and has undergone significant institutional restructuring to increase productivity levels. The main carpentry products producers are parastatal organisations. The sand producing market is dominated by two roughly equally-sized companies which control 80-90% of the market.

[16] Three housing management institutions were approached, to date.
[17] Information for this sub-section was drawn, partly, from an unpublished report drawn by R Tomlinson.

Since the late 1990s, materials producers have made inroads into neighbouring countries' markets, and increased their total production. They have also restructured extensively to align their activities with their core functions. In particular, the larger firms have begun outsourcing their transport requirements. Whilst this approach was taken primarily to achieve financial efficiency, some interviewees, mentioned that more recently concerns about HIV/AIDS economic impacts were important considerations. Critically, all interviewees identified that a significant proportion of the cost of materials is derived from the cost of transport. For instance, it was explained that the cost of transporting bricks for a $30m^2$ house from Sasol to Bloemfontein, meant that the cost of bricks in Bloemfontein is on average R1 000 higher than in Sasol.

Manufacturers of materials are also vertically integrated and own a number of materials supply chains used in the low-income housing sector. Some provinces such as the North West Province subsidise selected material retailers. In the course of the provincial interviews, we have also noted that some developers and contractors own their own materials manufacturing facilities. For example Group 5 owns the largest cementous roof sheeting manufacturing company.

A materials supply chain, Cash Builders, is emerging as significant in the supply of materials to the PHP process. It provides materials on a credit basis, operating among similar lines to furniture retailers, a facility normally only accessible to established construction contractors.

2.4.11 Institutional role-players in government[18]

The term institutional role-players refers primarily to delivery agents active within the national, provincial and municipal spheres of government. Their involvement is particularly relevant in respect of three aspects of the housing supply systems:

- The subsidy management functions;
- The land assembly and planning component; and
- The developer role.

These role players are involved in the screening and approval of project proposals and subsidy applications as well as the processing of subsidy drawdowns. Significant administrative capacity variations exist within provincial departments of housing responsible for allocating and administering subsidies. This affects the extent to which provincial housing budgets have been spent. In those provinces where the least institutional capacity exists, delivery has been remarkably slow. The majority of interviewees identified this role as being particularly weakly performed[19]. Private sector operators even identified specific provinces where this function is performed so poorly that they have opted not to operate there, for example Limpopo, Mpumalanga and the Eastern Cape. Some provinces, such as Gauteng, have taken steps to fast track-draw down payments. In the course of the provincial interviews, to date, the poor performance of provincial government role-players in performing this

[18] These delivery agents have mostly been interviewed as part of the case study and provincial survey processes. In each province, in particular the Provincial Department of Housing and at least two municipalities have been approached.

[19] It is important to note that this is an intrinsic weakness which the National Department of Public Works has taken steps to alleviate in respect of the provincial Departments of Public Works. This has included appointing facilitators to ensure that allocated budgets are spent, monitor tender award processes and trouble-shoot where bottlenecks are experienced by government role-players.

function was identified as a major factor of project breakdown and even company bankruptcy.

As seen in previous sections, inefficiencies in the processing of subsidy draw downs affects the financial viability of projects negatively. Specific aspects which were identified as being particularly concerning included:

- The lack of transparency and reliability of proposal calls and adjudication of tenders;
- Delays in the approval process for project proposals and the approval of subsidy applications;
- Delays in the processing of draw-down payments by provincial officials extending the duration in which bridging finance has to be held;
- Informal performance retention practices, some officials decide unilaterally to approve draw-downs only in part, despite no regulatory basis for this; and
- Allegations of corruption and/or financial improprieties in respect of the adjudication of tenders or approval of proposals.

The new procurement policy, which specifies more efficient and transparent implementation systems, has generally not been internalised by the provincial departments of housing. Gauteng's extensive institutional restructuring to meet the approach stands apart from the norm in this respect.

Some interviewees explained that where municipalities act as the developer additional problem areas arise, including:

- Allegations of corruption and lack of transparency in the adjudication of tenders;
- Delays in the payment of contractors; and
- Financial insolvency of municipalities (including cheques bouncing).

Secondly, the land assembly and planning component requires the involvement of municipal authorities, provincial authorities or other land development authorities. It includes the property registration system governed nationally by the Deeds Office and the Surveyor General's Office. No other sphere of government has undergone as much institutional transformation, on an ongoing basis, as the municipal sphere. The successive phases of re-demarcation and restructuring of municipal government have meant that the extent to which municipalities have been able to perform this function over spatial jurisdictions previously catered for by other organs of state has been affected. For instance, in Gauteng, land development applications, brought to a municipality for planning approval, took on average three to six months in 1994. Today, such applications are lodged for up to 18 months before they are heard. Some interviewees identified, in particular, that the requirement for Environmental Impact Assessments (EIAs) to be performed for planning approval (required by the National Environmental Management Act of 1998) can prolong the duration of planning activities by a whole year. Similar problems are experienced with provincial Townships Boards. Although created to facilitate low-income housing planning processes, the provincial DFA Tribunals have only been minimally drawn upon for such purposes. In a number of provinces to avoid delays in the planning process use is still made of the old dispensation Less Formal Townships Establishment Act, all in the name of avoiding holding costs on land and escalation costs on the price of labour and materials. Although attempts to rationalise and speed up the planning process are ongoing, it remains one of the critical risk areas in the delivery of low-income housing. Importantly, interviewees stressed that over and above specific idiosyncrasies of the legal framework affecting land planning, the human resources capacity was deemed to be highly inadequate.

In terms of the property registration system similar capacity problems were reported. These capacity shortages may be associated with the fact that until the early 1990s the majority of the South African population was deprived of ownership rights. Since then steps have successfully been taken to upgrade and regularise tenure rights to individual ownership. This process, together with the granting of more than one million title deeds since the implementation of the housing subsidy scheme, has stretched the administrative capacity of both the Surveyor General and the Deeds Offices. However, concerns were expressed by interviewees that delays experienced in registering property rights were a common occurrence. In addition, interviewees also deplored increases in the price of transfer fees which have added to the cost of housing without a concomitant increase in the subsidy.

In terms of the institutional subsidy requirements, transfer of the property into the ownership of the beneficiary is restricted for during the first four-year period Therefore, the registration process does not affect the institutional supply system, to the same extent as it does the developer/contractor supply system. In the PHP supply system the majority of housing structures developed through this process have occurred on sites already registered in the name of the beneficiary. Where this supply system has been identified as a future delivery process for greenfield development, it is likely that similar obstacles will be encountered.

2.4.12 Sub-section summary

Table 3 below represents graphically the relative importance of each delivery agent to the applicable components in the three supply systems. Double ticks signal the relative importance of the delivery agent.

Table 3: Respective contributions of delivery agent to the components applicable to the different supply systems

	Supply system	Developer contractor					PHP			Institutional						
	Typical applicable component	Bridging finance	Land assembly + planning	Servicing sites	Top structure	Materials	End user finance	Top structure	Materials	Bridging finance	Land assembly + planning	End user finance	Servicing sites	Top structure	Materials	Housing management
Delivery agents	Bridging finance institution	✓✓	✓	✓	✓	✓				✓✓	✓		✓	✓	✓	
	End-user finance institutions						✓	✓	✓		✓	✓✓	✓	✓	✓	
	Professionals		✓✓	✓	✓			✓			✓✓		✓	✓		✓
	Developers	✓✓	✓	✓	✓	✓										
	Contractors/sub-contractors			✓✓	✓✓	✓✓		✓					✓✓	✓✓		

Supply system	Developer contractor					PHP			Institutional						
Typical applicable component	Bridging finance	Land assembly + planning	Servicing sites	Top structure	Materials	End user finance	Top structure	Materials	Bridging finance	Land assembly + planning	End user finance	Servicing sites	Top structure	Materials	Housing management
Local labour				✓✓			✓✓						✓✓		
Beneficiaries		✓		✓		✓	✓✓	✓			✓✓				✓
Institutional role-players in government	✓	✓✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓
Housing support NGO's						✓	✓✓	✓	✓	✓					✓
Housing management institutes										✓	✓✓	✓✓	✓✓	✓	✓
Materials			✓	✓✓	✓✓			✓✓	✓✓				✓✓	✓✓	

In the following chapter we will move on to specifying findings to date in respect of the demographic profile and risk factors of the delivery agents and their demographic susceptibility to the HIV/AIDS demographic impact.

3 DELIVERY AGENTS' SUSCEPTIBILITY TO DEMOGRAPHIC IMPACT

In this Chapter we explore the susceptibility of delivery agents to the demographic impacts of HIV/AIDS. The chapter has two main sections.

Firstly, we briefly examine key issues and trends related to the spread of the epidemic in the country and in the different provinces. We also identify specific factors affecting the spread of the pandemic at the society/community level, and specify behavioural risk factors predisposing individuals to HIV exposure and infection. More detailed information can be found in Annexures 3 to 5 of the report, dealing with the economic impact of HIV/AIDS on companies, the macro-economy and the socio-economic impact of the pandemic on households and communities.

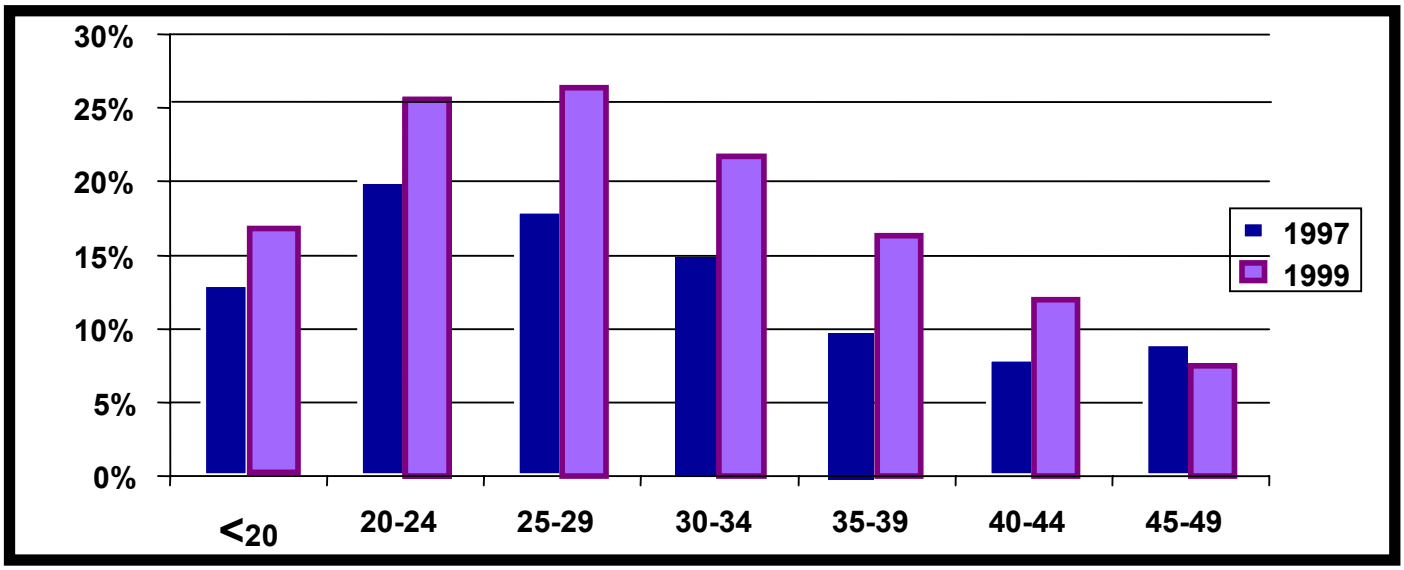
Secondly, we present the findings of our research to date, in respect of perceptions of susceptibility, risk issues and evidence of prevalence among the different delivery agents.

3.1 HIV/AIDS trends and risk factors

Figures released in early 1999 reflect that sub-Saharan Africa has more than two-thirds of the world 's 33,4 million people who are HIV positive. We are currently experiencing one of the fastest growing epidemics in the world, with an additional 1 500 infections, daily or 4.2 million by the end of 1999. The Medical Research Council's report on adult mortality states that 40% of the adult deaths between the ages of 15-49 years that occurred in 2000 was due to HIV/AIDS. Life expectancy in South Africa decreased from 63 years at the end of 1990 to 56.5 years at the beginning of 2000.

Sero-prevalence rates among the general population are derived from actual prevalence rates recorded in antenatal clinics. Because the sample for the actual prevalence rates is partial (i.e. only pregnant women attending public sector clinics), prevalence has to be adjusted to reflect a broader demographic and socio-economic profile. Overall prevalence among pregnant women attending ante-natal clinics are also differentiated by age cohorts and reveal highest levels among younger age groups (20-34 years), as shown in the Figure 15 below.

Figure 15: HIV infection levels in pregnant women by age group in South Africa. Source: National Survey of Women Antenatal



In October/November 2000, 24% of pregnant women served by public sector clinics in South Africa were HIV infected. Despite a slight decline in antenatal infection levels between 1998 and 1999, there is no clear evidence that the national epidemic is reaching a plateau and in certain provinces it is clearly still growing.

According to AIDS Review 2000 and the annual national HIV and Syphilis Sero-Prevalence Survey 2000, the disease is spreading unevenly across the provinces, thus the epidemic does not show a uniform picture for the whole country below:

Table 4: Spread of HIV infections across the provinces (AIDS Review, 2000 and National HIV and Syphilis Sero-Prevalence Survey 2000)

Province	1995	1996	1997	1998	1999	2000
South Africa	10.4	14.1	16.0	22.8	22.4	24.5
Eastern Cape	6.0	8.1	12.6	15.9	18.0	20.2
Free State	11.0	17.5	19.6	22.8	27.9	27.9
Gauteng	12.0	15.5	17.1	22.5	23.9	29.4
KZN	18.2	19.9	26.9	32.5	32.5	36.2
Mpumalanga	16.2	15.8	22.6	30.0	27.3	29.7
Northern Cape	5.3	6.5	8.6	9.9	10.1	11.2
Northern Province	4.9	8.0	8.2	11.5	11.4	13.2
North West	8.3	25.1	18.1	21.3	23.0	22.9
Western Cape	1.7	3.1	6.3	5.2	7.1	8.7

3.1.1 Risk Factors

HIV/AIDS is a disease spread primarily through sexual contact, transmission from infected mothers to their newborns or inoculation with an infected person's blood. In HIV/AIDS is transmitted between adults through bodily fluid contact, primarily through sexual intercourse, sharing needles, and through contact with an open wound with infected blood. In South Africa, the primary mode of transmission of the HIV virus is through heterosexual intercourse. Specific factors are instrumental in either exacerbating or mitigating the spread of the epidemic within a given society, these include:

- Social and political stress and instability (from war to political transformation);
- Highly mobile populations and circular migration patterns between and to place of work and residence of the household unit;
- Social acceptance of multiple sexual partners; and
- Poverty and inequity in particular in respect of the position of women within the broader social framework.

In South Africa, all the underlying pre- conditions exist for being amongst the worst hit countries in the world.

Specific factors predispose individuals to be more or less exposed to the risk of contracting the virus. These are behavioural risk factors:

- Living away from a primary sexual partner for prolonged period of times (endemic to labour migrancy);
- Work related mobility over shorter periods of time (more than 100kms);
- Substance abuse affecting sexual inhibitions (in particular alcohol abuse);

- Frequenting commercial sex workers;
- Access to spare financial resources to purchase sex;
- Infrequent condom usage;
- Lack of access to education about sexually transmitted diseases and HIV/AIDS;
- The gender of the person exposed to the HIV virus; and
- Pre-existing Sexually Transmitted Diseases and sexual lesions.

HIV/AIDS does not specifically discriminate on the basis of age or race. However, younger people as a group tend to be more sexually active, and to have more sexual partners than older people. Women, individually, are more prone to contracting the virus, because their physiology which exposes them to infected fluid during sexual intercourse for longer than in the case of men.

As a group, women are more susceptible because of their position in society. In South Africa, black women in particular have turned out to be the most adversely affected. Poverty, patriarchy and violence seemingly seal their vulnerability and powerlessness in the face of the HIV/AIDS onslaught. In turn, such society/community-wide considerations suggest that the poorest and the most severely stressed socio-economic groupings would be more susceptible. In South Africa, the historical legacy of apartheid, which entrenched inequitable socio-economic conditions, has yet to be overcome. This means that specific race groups are more susceptible than other in terms of their exposure to the virus. Additionally, South African human settlement dynamics such as circular migration, noted above as a key behavioural risk factor also contributes to the demographic risk profile.

Several studies in other African countries have indicated that people with higher incomes and social status have had higher rates of HIV infection than poorer people. This is thought to be because wealth and status create opportunities for high-risk sexual behaviour. Importantly however, there is evidence that better off people in communities may be more able to change sexual behavior and HIV risk once prevention programmes make them aware of their risk and ways to prevent infection.

However, it is critical to reiterate that individually, these behavioral factors do not automatically determine whether an unprotected sexual encounter between an HIV negative and an HIV positive person will result in transmission of the virus between two parties. Neither do they automatically suggest that by not engaging in such risk behaviour, one overcome the susceptibility to demographic impact. They are, however, factors that predispose to exposure to the HIV virus and infection.

3.1.2 Health impacts of HIV/AIDS

HIV/AIDS is a chronic disease. Most infected people only show signs and symptoms of disease after many years. They are unaware of their infection, unless tested, but nevertheless able to transmit HIV to others. HIV infection results in a progressive weakening of the immune system. This makes a person susceptible to a wide variety of opportunistic infections and cancers. The HI virus itself can also lead to various nervous system complications, fever and weight loss without any other obvious cause. Secondary infections due to lower immunity occur at stages of disease before development of AIDS itself. Secondary diseases that are termed “AIDS defining conditions” occur in the end stage of the natural history and are often costly conditions to treat and manage.

Diseases associated with HIV infection occur with different frequency in different population groupings. Among the most important secondary infections, in terms of their frequency, cost and impacts on the individual and communities, are:

- Tuberculosis
- Diarrhoeal disease of various types
- Herpes virus infections
- Candida (thrush)
- Bacterial pneumonias.

3.2 Demographic profiles and susceptibility to demographic and economic impact

In the following sub-section, we examine the demographic profiles of the different sources of labour for the different components and delivery agents, in particular we will examine the following aspects:

- Delivery agents' perceptions of their own susceptibility to a HIV/AIDS demographic impact and perceptions of others in the supply system;
- Demographic profiles and risk issues affecting the different delivery agents; and
- Evidence of sero-prevalence among delivery agents.

In the survey of national role-players and stakeholders, the case studies, the telephonic interviews and the provincial interviews undertaken to date, respondents were asked about their perceptions of their own susceptibility to HIV/AIDS and that of others active in the supply system. The following sub-sections relate these perceptions in greater detail. They also sketch out likely broad demographic profiles based on the findings of the literature survey, the national interview, case studies and telephonic interviews and reflect on the extent to which these have been verified in the course of the provincial interviews. Further, we identify risk issues pertaining to susceptibility to infection and report on anecdotal evidence of demographic impact, both in terms of delivery agents reporting evidence of demographic impact on their own organisations, as well as on others active in the system.

3.2.1 Bridging finance institutions

Own susceptibility and behaviour risk issues

National respondents were fairly confident that their own organisation **is not susceptible to HIV/AIDS**. They attribute this perception to the fact that most of their employees are professionals. In other words, that because they are educated, employees are unlikely to be involved in risk behaviour. Most bridging finance institutions are staffed by professionals, clerks and sale representatives. The majority of professionals are males aged between 30 and 45 years of age of a diverse racial profile. Office support personnel is varied and comprises mostly female employees.

One particular risk factor which can be identified in respect of this delivery agent is the **mobility of professional and technical support personnel on site**, where the bridging finance institution provides such services[20].

[20] This reasserted by the employees of a bridging finance institution to whom a presentation of the research findings to date was made.

Susceptibility of other delivery agents

The respondents identified others in the system as being highly susceptible; in particular, construction workers, beneficiaries, as well as government officials involved in the administration of subsidies and in the planning system.

3.2.2 End-user finance institutions

Own susceptibility and behaviour risk issues

End user finance institutions **did not perceive themselves to be susceptible to a demographic impact of HIV/AIDS on their labour force.** The education level among employees was perceived as a safeguard against risk behaviour. Overall, end-user finance institutions are staffed by professionals, sales representatives and clerks from a spread of racial age and gender profiles. The required level of interface between the beneficiaries and the **sales representative implies quite an extensive level of mobility of personnel**, which some interviewees noted as a possible source of exposure.

Susceptibility of other delivery agents

What appeared to concern interviewees most is the perception of high prevalence among beneficiaries. This focus is understandable given that these institutions are financially vulnerable to the social and economic wellbeing of their clients, as this would affect their ability and willingness to repay loans and/or bonds. Although the end user finance institutions had not explicitly felt a demographic impact on themselves, they have been experiencing an increase in the loan default rate (ranging from 0.5% to 2.5%). They attribute this to both the overall economic downturn in the country and the demographic and economic impact of HIV/AIDS on their clients

3.2.3 Professionals

In the national interview process, most professional councils were approached. Typically these organisations do not keep any form of demographic information about their members, and were not able to provide demographic profile information. Information gathered from other national and case study interviewees about these delivery agents suggests that, historically, they are white males aged between 30 and 55 years of age. However, interviewees explained that this profile is now diversifying considerably in terms of age, race and gender. This was confirmed by university and technikon enrolment profiles, which we were able to access.

A key risk issue of these delivery agents is that related to project mobility. Typically, the duration of mobility tends to be much shorter (role as advisors rather than implementers) than that of other types of construction role-players such as project managers, foremen and skilled construction labour, save for project managers. This suggests that a differentiation between professional support delivery agents, and “on-site” professionals and technicians is required. Based on our interviews, to date, we believe that as the latter is often required to be on site for longer periods of time than the former, this group would be more at risk of exposure.

Anecdotal evidence of demographic impact on this type of delivery agents was reported in the course of the provincial surveys. This was, however, much less frequent than the reporting of anecdotal evidence of demographic impact on other delivery agents.

3.2.4 Contractors and sub-contractors

Own susceptibility and behaviour risk issues

Although only about 60 contractors and sub-contractors have been contacted to date they expressed **concern that their employees (and a few even related to themselves) were at risk of a demographic HIV/AIDS impact**. Because a significant proportion of construction contractors comprises former skilled employees of large contracting organisations, they are predominantly male and range in age between 35 and 55. Although provincial demographic profiles would affect the racial profile of contractors, the local procurement requirements mean that most contractors (and especially sub-contractors) involved in the development of low-income housing-are black people.

Because most contractors resource their labour requirements informally from casual workers in the beneficiary community, **contractors tended to differentiate between their own permanent workforce (typically highest skills profiles) and other contract-based and casual workers.** Typically, civil engineering contractors' labour forces have a higher skilled permanent labour force than construction contractors. This is linked to the fact that most of the activities performed by civil engineering contractors require the use of large plant and machinery. On this basis, **contractors and sub-contractors differentiated between the different skill profiles on site, whereby the higher the skills level the lower the overall perceived demographic impact**. Provincial differences are emerging in this respect, for instance in the Western Cape, the contractors interviewed explained that the historically strict enforcement of job reservation in the Province has meant that most skilled and semi-skilled workers are middle-aged Moslem workers, seen to not be engaging in risk behaviour. In KwaZulu Natal and Gauteng respectively, it is the fact that these workers have received some form of formal education which is seen as a mitigating factor against risk.

Importantly, these perceptions tend to be contradicted by the evidence emerging from the national interviews, the case studies and the provincial interviews to date. In respect of skills level as a determinant of susceptibility to HIV/AIDS demographic impact, the anecdotal evidence emerging from the construction industry representatives, the medical aids, and some provincial interviews, is that prevalence rates among skilled, better educated workers is extremely high.

The contractor interviewed in the Gauteng case study explained that two of their sub-contractors (who operate on a retainer to the contractor) had passed away due to HIV/AIDS in the last year. Evidence of a demographic impact on skilled and semi-skilled labour was also reported in the course of the provincial surveys, especially in the Eastern Cape, KwaZulu Natal, Gauteng, the Free State, Mpumalanga and Limpopo. Both the case studies and the provincial interviews conducted to date emphasise the high mobility of skilled and semi-labour as a factor of demographic susceptibility to HIV/AIDS impacts. Reports of workers compounds being routinely targeted by occasional sex workers and "girlfriends" were abundant. Interviewees explained that it was not uncommon, on longer-term projects, for labour to father

children in nearby communities. This suggests that the use of condom may not be prevalent. Of particular concern were the reports that the age of the “girlfriends” has decreased in recent years. Respondents from a large civil and construction organisation mentioned that they now routinely refer to the compounds as the “crèches”- because of the fact that they see young girls leaving the compound in the morning dressed in their school uniform. They explained that this occurs in spite of the company having placed entry restrictions for women in the compounds.

Interviewees reported incidents of contractors subjecting their skilled employees to HIV testing for the purpose of obtaining visas to resource projects in countries in the sub-region, in particular Angola and Mauritius. Remarkably, prevalence rates of between 50% and 70% of project teams with up to 50 skilled workers were reported. One of the largest South African civil and construction contractor noted that labour often opts out of a such a project before being tested, once they find out about the testing requirements. The fall-out rate, prior to testing, was reported to be approximately 30% of planned labour teams. In the course of the interviews, private health care providers who provide medical support to large contractors emphasised the limited and often erroneous understanding of the pandemic among labour. For instance, the belief that serial monogamy was a viable safeguard from exposure to the virus was reported as rife. Of note are the overwhelming reports that condom distribution campaigns on site are met with rejection from labour. The rejection is based on the grounds that condoms “cause STD’s”, “hurt women” and “prevent pleasure”.

Similarly, the medical aid respondents explained that increases of up to 45% had been experienced in terms of semi-skilled and skilled workers claiming medical costs for opportunistic HIV/AIDS illnesses, such as chronic gastrointestinal infections, pneumonia, skin lesions, and the chronic hospitalisation of dependants. This alarming proportion should be tempered on the basis that the medical aid fund does not cover all construction labour, and that this percentage increase has not been verified by testing or by establishing conclusive evidence.

In terms of **unskilled local labour, contractors and sub-contractors reported evidence of HIV/AIDS demographic prevalence**. For instance in the Developer/Contractor case study in KwaZulu Natal it was reported that on average three to five out of a team of 50 labourers had openly admitted their AIDS status. Other anecdotal evidence tended to vary between 10% and 25% of unskilled and casual labour on site. Interviewees in Gauteng, Limpopo, the Free State and the Eastern Cape reported that often stigmatisation of HIV/AIDS leads individuals to claim that they have been bewitched as a reason for weight loss and recurring ill-health. Among the sub-contractors interviewed concern was expressed that illness related absenteeism was rife, and could amount to up to two weeks of absenteeism at a time per worker.

The extent to which contractors are able to track this is, however, limited. Indeed, labour turnover and attrition is traditionally high, and the labour procurement role is often undertaken by community committees.

Susceptibility of other delivery agents

Finally, contractors and sub-contractors are concerned about prevalence among beneficiaries whom they interact with directly in the course of projects both as local labour and through community project committee. This concern was borne out of evidence of morbidity and mortality which they attribute to HIV/AIDS. Contractors explained that where involvement with community committees lasts over a long

period of time, from project conceptualisation to implementation, they are more able to detect demographic impact among beneficiaries.

3.2.5 Organised labour

Own susceptibility and behaviour risk issues

Although no interviews were undertaken with general construction labour (save for some interaction in the course of the case studies) interaction with four construction union representatives were undertaken. **The representatives were in agreement that HIV/AIDS is having a significant impact on their members.** When asked about how the institutional arm of the unions fared in terms of susceptibility to demographic impact, most interviewees categorically dismissed such prospects, although one openly admitted that some of his colleagues were either HIV positive or already experiencing full-blown AIDS.

The evidence of prevalence among workers was drawn from it's the impact on the provident fund and membership levels. For instance the National Union of Mineworkers' Construction Industry Benefit Fund has been affected by a marked **increase in claims associated with early deaths of natural causes**. All the interviewees attributed high prevalence levels to **high migratory and mobility patterns among labour (from site to site), poor working conditions and substance abuse (mostly alcohol), leading construction labour to purchase unprotected sex from commercial workers**. They also deplored the inadequate prevention role which employers are said to perform, in particular in respect of education, condom distribution and medical benefits.

In the interviews, the unions' representatives **suggested prevalence rates among their members of between 15% and 40%.** They explained that the workers with the highest skills levels are probably the most vulnerable to prevalence. They are the most mobile, and because they are away from their families for long period of time, are inclined to abuse alcohol (which they identified as a social plight among workers) and frequent commercial sex workers. High prevalence levels were confirmed by the construction sector medical aids which, based on an assessment of claims submitted within the last two years, estimate that **prevalence levels may be as high as 40% across all skills levels**.

Susceptibility of other delivery agents

Finally, the workers' unions expressed concerns about high prevalence rates among beneficiaries, and were aware of different prevalence rates across provinces. This concern was not specifically substantiated by reports of evidence.

3.2.6 Housing development support NGO's

Own susceptibility and behaviour risk issues

Among the housing development support NGO's some **concern was expressed by respondents**, in respect of the organisation's own susceptibility to HIV/AIDS, but **only where the organisation has on-site construction personnel**. This sector comprises a high percentage of young professionals of equal gender spread but with racial profiles that reflect provincial characteristics. Typically, these organisations are small in terms of their total staff complement (from 10 to 25), and comprise a high

proportion of entry level and middle level professionals across all gender and racial profiles.

Susceptibility of other delivery agents

The demographic profile of support organisations that are most entrenched within the beneficiary community whom they assist, (i.e. the PHP process), mirrors closely the demographic profiles of such communities. Because they operate directly with beneficiaries, their main source of concern is the demographic impact of HIV/AIDS on beneficiaries. Reports of evidence of demographic impact among beneficiaries are fairly widespread. For instance, the Homeless People Federation (HPF) and its support NGO, People's Dialogue mentioned that AIDS morbidity and mortality levels are high among their members. In the KwaZulu Natal PHP study, the willingness of HPF members active in the construction process to consider HIV/AIDS prevalence among themselves was varied. While younger members of the team were fairly open about issues such as condom usage and evidence of HIV/AIDS prevalence, its older members (in particular middle-aged women) categorically refused to engage with the topic. This has even sparked a mobilisation song among members known as "the snake with many heads".

For additional information on the demographic impact of HIV/AIDS on households and its implications for housing demand, Annexure 6 provides an overview of issues identified in the literature review.

3.2.7 Housing management institutions

Own susceptibility and behaviour risk issues

Housing management institutions were **unsure about their own susceptibility**, they were aware that education may not affect the propensity of specific individuals to engage in risk behaviour. In addition, they also reflected on the fact that a significant proportion of **their personnel is made up of young professionals, and saw the youth as a risk group overall**. The demographic profile of such institutions is generally aligned to that of Housing Support NGO's, with the exception that they have relatively limited in-house construction personnel.

Susceptibility of other delivery agents

Like the housing development support NGO's and the end-user finance institutions, they focused most of their concern on beneficiaries, based largely on their practical experience. Given that the majority of their beneficiaries (in new housing stock) are female-headed households, they are concerned that they are particularly vulnerable to HIV/AIDS demographic impact. They reported anecdotal incidents of their members being repeatedly ill and identified specific HIV/AIDS opportunistic disease symptoms such as skin lesions and rapid weight loss.

3.2.8 Developers

Own susceptibility and behaviour risk issues

Developers **did not easily envisage that their organisations would be susceptible to a demographic HIV/AIDS impact**. They based this perception on the substantial downsizing of the sub-sector and the fact that most developers are now small enterprises manned by small professional labour pools (between 2 and 10 employees). While developers as a category of delivery agents is still primarily the domain of white males aged between 35 and 55, an increasing proportion of developers (in particular through the use of consortia) is made up of black men and women. A key role played by developers is that **of subsidy and beneficiary administration**. This role is often **performed by one or two people for each project, and requires fairly active presence among the beneficiary community**. This may require that those performing this role have to be away from their place of residence on a regular basis- which is one of the behavioural risk factors.

Susceptibility of other delivery agents
They reported evidence of HIV/AIDS impact among contractors and labour on site, among beneficiaries and government officials. In respect of the latter, the manner in which they identified demographic impact was to reflect on the oddity of young officials being chronically ill and then passing away. Their perceptions of demographic prevalence among construction workers and sub-contractors was high and based on more specific mention of physical symptoms such as coughing, loss of weight and skin lesions. Finally, they reported an increased incidence of beneficiary absenteeism at the time of completion of the top structure (from 2,5% on average to between 5 and 20% depending on the province), which they directly attributed to the demographic impact of HIV/AIDS. The KwaZulu Natal case study interviewees reported marked increases in the levels of absenteeism over the last five years. In KwaZulu Natal in particular, this increase had taken an average 5% rate of absenteeism in 1997 to an alarming 20% currently.

3.2.9 Materials manufacturers and suppliers

Own susceptibility and behaviour risk issues

Although materials manufacturers and suppliers have capital intensive production processes, the size of their labour force is generally much greater than those of other delivery agents. As they tend to be highly institutionalised, their human resources management functions are far more developed than those of other role-players. This enables such organisations to track trends affecting labour and in particular morbidity, mortality and absenteeism. The materials manufacturers interviewed expressed a profound **concern about their own susceptibility to demographic impact.** Their concern is also linked to the susceptibility of the transport sub-sector.

The interviewees were extremely specific in terms of reporting evidence of HIV/AIDS impact on their workforce. One of them explained that 20 confirmed HIV/AIDS are reported out of a workforce of 14 000 per month, **irrespective of the skills level** of employees. Another reported that a strategic decision was made to outsource the transport function as a result of demographic prevalence among workers. The same company opted to exclude hostel residents from new intakes of workers, after they reviewed the residency profiles of HIV/AIDS affected workers. Another company, which has undertaken sample testing from within its workforce of close to 1 000 permanent employees, estimates that close to 20% of its workforce is infected.

Susceptibility of other delivery agents

The interviewees viewed beneficiaries and contractors as being highly susceptible to demographic impacts. They also saw the transportation sector in general, as a highly susceptible sector.

3.2.10 Institutional role-players

Institutional delivery agents have been approached as part of the case study and provincial processes. Overall, while some provinces are acting on evidence of demographic prevalence among beneficiaries (by setting up research activities for framing specific policy interventions), there does not appear to have been much reflection on the demographic susceptibility of the provincial delivery agents. Similarly, while HIV/AIDS issues are being examined as part of some municipal Integrated Development Planning (IDP) processes, the focus of such analysis of demographic impact is only on the municipal constituents. This means that no direct consideration is being given to how HIV/AIDS may impact on the roles performed by municipal officials and other role-players. The **vocal concerns expressed to date by the Municipal Workers Union (MWU) in respect of HIV/AIDS, suggest** that prevalence is affecting at least part of the labour force of municipalities.

In terms of the provincial interviews undertaken to date, we have noted anecdotal evidence that there has been an increase in the amount of sick and compassionate leave, deaths as well as medically unfit early retirements being processed by both municipalities and provincial departments. This anecdotal evidence was gathered in the course of engagement with Human Resources officials in both spheres of government. Overall, most officials attributed this trend to the impact of HIV/AIDS. However, it is important to note that municipal HR officials attributed the increased level of sick leave among housing officials to stress rather than medical ill health. This finding appears to correlate to the findings of the interviews with municipal housing officials who related stress to the ongoing transformation and institutional reengineering which has marked municipal government since1994.

3.2.11 Chapter summary

Table 5 summarises the perceptions and evidence of demographic impact on delivery agents.

Table 5: Perceptions and evidence of demographic impact on delivery agents

Delivery agent	Demographic risk issues	Evidence of demographic impact on own organisation	Reported evidence of demographic impact on other organisations
Bridging finance	Mobile sales representatives and technical support personnel	N/A	Institutional role-players in government Contractors and labour Beneficiaries
End user finance	Mobile sales representatives	N/A	Beneficiaries
Developers	Unclear	N/A	Institutional role-players in government Contractors and labour Beneficiaries
Contractors and sub-contractors	Formerly employed as skilled workers (past	Some	Labour and beneficiaries

Delivery agent	Demographic risk issues	Evidence of demographic impact on own organisation	Reported evidence of demographic impact on other organisations
	history of mobility)		
Labour	Mobility of skilled workers Semi-skilled and unskilled labour from local community	High	Beneficiaries
Housing development support NGOs	Young professionals High involvement with beneficiary community means some mobility	Some	Beneficiaries
Housing management institutions	Young professionals	N/A	Beneficiaries
Institutional role-players	N/A	Some	Beneficiaries

3.3 Issues emerging from the perceptions and evidence of demographic prevalence and impact among delivery agents

One of the purposes of the survey of national role-players and stakeholders the case studies and the telephonic interviews, was to question respondents about their perceptions of their own susceptibility to HIV/AIDS and that of others active in the supply system. This process revealed a partial understanding of what demographic and socio-economic groupings are most exposed to a demographic impact. Typically, respondents identified black people, the poor and the uneducated as socio-demographic groupings within which HIV/AIDS prevalence was high. Almost all respondents were confident that HIV/AIDS prevalence was small or nil within their own organisation. This “them vs us” mentality was less pronounced among some of the small contractors contacted to date, and based on the case studies, among the community leadership structures in the PHP supply system.

In terms of the labour profile mobilised for the performance of the delivery agents’ role, a few issues are emerging which should be used as a backdrop when considering the specific characteristics of labour in the low-income housing sector. Firstly, the overall number of those employed in the construction sector has steadily decreased since the 1990s. Restructuring has meant that a high number of those formerly employed in the sector have either started their own small businesses and/or left the sector entirely. The precariousness facing most small business operators in the sector has been linked to extremely high levels of liquidations (up to 150% in mid-2001). This has pushed labour and other human resources into other sectors of the economy. This downsizing process has also resulted in further attrition of skills levels and reducing opportunities for on-the-job training.

In respect of role-players active in the construction sector, the sector is experiencing demographic transition. Predominantly white, middle-aged, male professionals, technicians, skilled and semi-skilled workers are being replaced by other demographic profiles, in terms of race, gender and age (due in large part to affirmative action and government's local procurement requirements). This trend is more pronounced in the low-income housing sub-sector than in the construction sector as a whole, where historical racial, gender and age profiles are still fairly entrenched. Secondly, mobility of labour is proportionately lower for semi-skilled and unskilled workers in terms of low-income housing projects, than in terms of other

construction activities, due to local procurement requirements. On the other hand, skilled workers tend to be as mobile in this sub-sector as those in other types of construction, which they can easily be drawn into, owing to the overall scarcity of skilled construction labour. Thirdly, greater involvement of women in the construction sector has been identified as a priority by the National Department of Housing. This has been interpreted differentially by Provinces, some of whom have introduced quotas relating to ownership structure of companies involved in the construction process and/or the number of employees participating in the actual construction activities. This lack of uniformity in respect of how this priority is to be implemented makes an assessment of how will affect labour profiles unclear.

4 VULNERABILITY TO ECONOMIC IMPACT OF THE DELIVERY AGENTS, COMPONENTS AND SUPPLY SYSTEMS

Depending on the nature of the company and its organisational structure, a demographic impact of HIV/AIDS translates into an increase in the cost of production. AIDS-related illnesses, absenteeism and death to employees affect a company by both increasing expenditure and reducing revenue. Sunter and Whiteside (2000) identify the costs associated with HIV/AIDS at the company level to include:

- Increased absenteeism because of the ill-health of employees, time taken by workers who are also care-givers, and compassionate leave;
- Sagging workforce morale;
- Decrease in productivity linked to morbidity and a reduction in the ability of workers to take on physically demanding activities;
- Decrease in workplace safety because of morbidity-related fatigue;
- Increased replacement costs associated with training of new staff;
- Fall in the average age and experience of labour as new and younger recruits have to be mobilised;
- Employers may compensate for the expected loss of their workforce during apprenticeship and to counteract absenteeism by increasing the size of their workforce;
- The attrition of skilled labour pools will cause wages to rise;
- The communities in the neighbourhood of a business are needing more support to weather the crisis;
- Rising hospital, health care and health benefits costs;
- Personal loans granted to employees have to be written off in the case of AIDS deaths;
- Derived demand decreases thereby reducing growth in the volume of sales.

The sections below examine the manner in which demographic impacts translate into economic impacts, in relation to the direct cost to companies as well as mitigating and aggravating factors, for each delivery agent.

The magnitude of various HIV/AIDS costs for an organisation varies, depending on combinations of factors such as:

- The general economic wellbeing of an economic sector and its delivery agents. If an economic sector is performing poorly and is affected by severe intrinsic vulnerabilities, then a demographic impact of HIV/AIDS on labour is likely to aggravate existing weaknesses and stresses.
- The risk profile of employees. This is influenced by factors such as age, gender, geographic and socio-economic origin of employees. Several situations expose employees to particularly high risk. Of particular relevance to low cost housing are short or long term separation from home and family, migrancy and distance truck driving. In addition, housing in single sex barracks or hostels predisposes to high-risk situations.
- Labour intensity. Labour intensive organisations will often be at higher risk of large numbers of employees developing AIDS. Cost and productivity implications can however be relatively small depending on the significance of other factors listed below.

- The skills profile of affected employees. Costs of HIV/AIDS to company per skilled worker affected by HIV/AIDS are likely to be substantially higher than per unskilled or casual worker. Skilled workers health and other benefit costs tend to be higher, as are costs of absenteeism, and of temporary or permanent replacement. In certain enterprises, loss of key personnel to AIDS can be crippling owing to knock-on effects. In the early epidemic replacement will be relatively easy, but will become more difficult as the epidemic becomes more advanced and therefore visible. Nevertheless, employers in countries with more advanced epidemics are reporting that even "unskilled" workers often have skills which cannot be replaced very simply. Training costs, even of unskilled workers, can be substantial over time.
- The contractual relationship between affected labour and a given organisation (including the extent to which medical and social benefits are provided). Employers providing more generous employee benefits may be more vulnerable to the direct costs of these benefits.
- The extent to which decision-making making is centralised within a particular organisation and the levels of multi-skilling among employees. The more decision-making is centralised and skills are compartmentalised in the workplace the higher the risk of production being disrupted by labour absenteeism due to HIV and AIDS impacts.
- The extent to which production processes and products are flexible and can accommodate variations, delays and change. Certain types of work processes may be particularly inflexible and vulnerable to unanticipated absence or low productivity of key employees.
- Interaction between direct and indirect costs. Strategies to limit costs in one area can result in increased indirect costs in others. For example, limitation of health benefits for people with HIV/AIDS can result in avoidable illness, reduce length of their productive life, increase costs of absenteeism, and lower employee morale. Severe limitations on benefits for HIV positive employees also discourage early disclosure of HIV status. If employees only disclose their status once it as begun to seriously impact on their performance or when death or disability will follow soon thereafter, active management and planning to reduce its impact on the individual and organisation function is more difficult.
- The degree of pro-active and cost-effective efforts to reduce HIV impacts. Prevention of new HIV infections or measures to reduce costly implications of established infections can both reduce HIV/AIDS costs.
- The ability of producers to accommodate increases in the cost of production and/or the ability of the market for certain products to absorb increases in cost of production.

The following sections discuss three issues. Firstly contextual issues related to the construction sector and its delivery agents in general are outlined. Secondly, areas of direct economic impact are examined, both in terms of where interviewees identified and expected impacts to occur by considering risk factors and intrinsic vulnerabilities applying to the roles performed by delivery agents. Thirdly, derived/"knock-on" impacts as well as existing and anticipated responses to impacts are also are discussed.

4.1 The construction sector: a sector in decline

Over the past 20 years, the construction industry has undergone massive structural and operational changes which have resulted in total investment in construction declining by 33% since 1980. Most of this is due to a decline in investment by

government and public corporations and has not been matched by private sector investment. Annexures 7 to 9 provide additional detail pertaining to the state of the construction sector, its employment practices and associated policy interventions.

The following trends are affecting the state of the construction industry:

- An increase in investment in non-residential buildings;
- An increase in the value of private sector building plans passed but a decline in the number and value of low-income housing plans passed;
- The number of contracts put out to tender rose 46% for the year 2000. During this time, the formal residential market received 30% more tenders, whereas the low-cost housing received 25% fewer tenders.
- For the year 2000, the number of companies being liquidated rose 47%, to a record number of 550. In mid-2001 this number increased further by 150%. In addition, registration of new construction companies decreased by 28%, resulting, for the first time in recorded history, in a negative net change.
- Confidence levels in the residential sector ended 67% higher on average for 2000 compared with 1999, but have since decreased substantially in 2001.
- Doubts are being raised about whether provincial housing departments are actually spending their allocated housing subsidy budget as the corresponding number of houses do not seem to be being built per year.

The following trends are expected by industry role-players to impact on the future of the construction sector:

- The overall size of the industry has halved since the 1980s yet the number of contestants has doubled. Contracts are becoming smaller and smaller, with smaller and smaller contractors competing for them, reducing the chances of success for the smaller contractors. This trend is currently gaining momentum.
- As new companies form continuously, to replace ones that could not survive, new jobs or additional output are not created. Instead, the casualisation of labour is exacerbated and the development of skills is curtailed.
- For residential development, contracts are smaller, dispersed geographically and require low capital assets to construct dwellings. Non-residential building works tend to have large companies and require a large capital base. This divergence will result in small contractors becoming more marginalised.
- The lack of adaptability and innovation in the construction industry has meant that role-players tend to employ in short-term survival strategies such as shifting to new geographic areas, and casualising their labour force rather than undergoing fundamental change to suit customer needs, and adopt more sustainable approaches to their own development.

Overall, these findings suggest that even with an upswing in the macro-economy and ensuing demand on the construction sector, the current condition of the sector as a whole, is extremely stressed and that current trends affecting the sector negatively are likely to continue in the future. Importantly, even non-alarmist macro-economic impact research forecasts a decrease in the rate of economic growth. The symbiotic relationship between the macro-economy and the construction sector as a whole suggests that where the macro-economy is under strain, the construction and housing sectors are highly vulnerable to depression, even though a time-lag is experienced between the two. It is likely that in a depressed macro-economic environment, with squeezed public and private investment levels and higher production and consumer prices, arising from the micro-impacts of HIV/AIDS, the majority of the construction and housing sectors is likely to experience a downturn in turnover and profitability.

4.2 Delivery agents' vulnerability to HIV/AIDS economic impact

The following sections examine evidence of economic impact on the delivery agents together with their own expectations of where economic impact is likely to be felt by themselves as well as by the systems. In addition, these sub-sections also document the current responses and future responses of the delivery agents, to both demographic and economic impacts.

4.2.1 Bridging finance institutions

Direct impact

As the bridging finance institutions are yet to experience a demographic impact on their own labour force, **they were unable to express a direct economic impact**.

However, based on our research, t bridging finance institutions apply different conditions of employment to their diverse employee profiles, usually applying more favourable health and social benefits as well as more permanent conditions of employment to the higher skills band. A component of the bridging finance institutions' workforce, i.e. technical and professional project support, is mobile and may be away from their primarily sexual partner on regularly. This poses a risk factor of exposure to HIV/AIDS. Consequently, the direct cost to the company of morbidity and mortality may be higher for such skill profiles, even if one considers the cost of medical and other benefits alone.

However, if one considers the role of technical and professional project personnel, a demographic impact on this skills base would impact on the overall productivity of these organisations. Because they enable bridging finance institutions to provide a fairly hands-on monitoring and support role to contractors' delivery contributions, their role is critical. In fact, it was identified by the interviewees that providing such hands-on role is a key area of risk management to ensure that contractors are able to perform their own roles and that the loans are honoured. Should HIV/AIDS have an impact on these role-players' ability to perform their functions, the company would be affected by a direct loss of productivity.

Derived/ "knock-on" impacts

The bridging finance institutions are currently experiencing an upsurge in defaults on loans, which they attribute primarily to the weaknesses of the low-income housing environment and its role-players, as well the overall macro-economic context. They are concerned that some of the demographic impacts of HIV/AIDS may be impacting on the economic well being of their clients, even though they are not able to specify it.

Because the client base of bridging finance institutions are small companies (typically closed corporations), they are concerned that should the key personnel among their clients be affected, the ability of those companies to continue operating may be threatened. This would affect the level of progress in projects, which would delay the payment of subsidy drawdowns and in turn the repayment of loans. One of the financial institutional interviewees mentioned the example of a small developer who holds a large proportion of the institutions' lending capital, run by two individuals where one suffered a stroke which incapacitated him for several months. His skills and role in the process were primarily related to housing project management. As a

result, a number of projects, which the company was developing, came to a standstill. In turn, the bridging finance institution became highly exposed and only managed to recover its financial security, once the person recovered and was able to perform his role. Similar scenarios can be expected as a result of HIV/AIDS.

The interviewees were significantly concerned about how demographic impact on institutional delivery agents would have an economic impact on their clients (contractors and developers), and on themselves. They explained that should provincial officials in charge of administering subsidy draw downs not be in a position to perform their role, the whole financial chain of projects would be affected, which in turn would affect the viability of the supply system as a whole. In the previous sections it was explained that this area is one which is critical for the successful implementation of housing projects, where it operates inefficiently, the financial burden on other role-players can precipitate business bankruptcy and liquidation. Some bridging finance institutions have already taken steps to address the negative experiences of this component of the system, admittedly with limited impacts.

Responses to economic vulnerability

Life insurance

Bridging finance institutions impose a mandatory life insurance on loans. They feel confident that the short duration of loans granted can shelter them from morbidity related HIV/AIDS economic impact on their clients. They are however researching possible safety nets to protect themselves from derived economic impact.

By focusing on potential morbidity and mortality among loan holders, they fail to consider the manner in which HIV/AIDS morbidity may affect their clients' household members. SMME's economies are highly integrated with their owners' household economies. HIV/AIDS impacts on individuals generally affect the economic wellbeing of the whole household. This represents a risk factor, as economic impact on the household may easily translate into an economic impact on the company. It may affect the ability of a loan holder to perform his or her contributions to the housing development process, which would in turn raises the risk of default on payment.

Shortening the duration of loans

One interviewee mentioned the possibility of shortening further the duration of loans. The feasibility of this proposal is however subject to the ability of other delivery agents in the supply system to "fast-track" projects. This could mean that contractors have to construct 250 houses a month, by flooding the site with labour and material. This would require significantly larger access to bridging finance (not to mention skills and other resources) than currently available to most contractors and developers.

4.2.2 End-user finance institutions

Direct economic impact

Like bridging finance institutions, **the extent to which end-user finance institutions reported a demographic impact on their own workforce was negligible**, mostly because they have not experienced a direct economic impact.

However, based on our research, mobility risk factors affecting sales representatives may be much higher than in the case of bridging finance institutions, as the spread of potential and existing clients is much wider. Sales representatives tend to have a limited contractual affiliation to the end-user finance institutions. This means that the cost of morbidity and mortality may be limited if one considers these costs alone.

However, reliance on ongoing contact between the financial institutions and loan holders, especially where defaulting is experienced, as a risk management strategy, means that a demographic impact on those particular employees would affect the operations of the delivery agents directly.

Derived/"knock-on" impact

End user finance institutions are experiencing an increase in the default rate (from 0,5% to 2,5%) which they suspect is partially linked to the economic impact of HIV/AIDS on beneficiary households. Project level end-user finance operatives interviewed in the course of the KwaZulu Natal and Gauteng case studies, have reported linkages between HIV/AIDS mortality and morbidity and a increase in default rates. Importantly, the case studies emphasised the duration of loans as a factor which mitigates the extent to which end-user finance facilities would be affected. In particular, it is expected that where small loans (between R2 500 and R5 000) are granted to supplement the subsidy amounts, the short repayment period can provide a measure of protection. Financial institutions expect that the situation is likely to worsen in future, and have set up a research process to evaluate the scope of impacts and recommend risk management measures.

Responses to impact

While most loans are conditional on life insurance being taken by prospective loan holders, the lending institutions are concerned that the costs of morbidity may be a greater factor of loan defaulting than the impact of HIV/AIDS mortality. To shelter themselves from this impact they are envisaging a number of possible responses, **including shortening the duration of loans, restructuring the lending conditions and introducing mandatory disability cover**.

While these measures may protect the lending institutions, the extent to which prospective beneficiaries may be able to abide by them for eligibility purposes is unclear. For instance, shortening the duration of a loan would mean an increase in monthly repayments, a situation that few households will be able to meet in the current macro-economic climate.

Further, focusing on the loan holder exclusively may be misguided. Indeed, household level economic impact is not always directly related to the loan holder. Research undertaken to date on household level economic impact reveals that household expenditure patterns shift dramatically once HIV/AIDS morbidity sets in, in order to prioritise items such as health care and nutrition. The findings of the PHP case study in KwaZulu Natal are telling in this respect. There, the loss of younger economically active family members decreased family income both through loss and the cost of morbidity, which meant that the households' ability to meet repayments was affected.

4.2.3 Professionals

It is unclear what the demographic susceptibility profiles for this group of delivery agents are, except those relating to mobility which affects some of these delivery agents.

However, based on our research, professionals operate as small-specialised teams or as independent consultants. A demographic impact on these role-players would easily translate into an economic impact on the unit of production as a whole. Not only would it affect the cost of providing medical and other social benefits, but also the ability of professionals to provide their contributions would be compromised, especially where full-blow AIDS sets in. For independent consultants, this would literally result in a breakdown in the unit of production.

Overall, it is estimated that while the skills base for the construction sector as a whole is currently over-capacitated, the availability of built environment professionals to the low-income sector is severely lacking. Although professional contributions tends to be modularised and standardised, given the fairly uniform nature of housing products and processes in the developer/contractor supply system whereas the PHP and the institutional supply system tend to lack professional capacity. The latter relates to the particular professional skill profile required in both systems. These combine both technical and the “softer” facilitation skills, which are mostly acquired on the job. As a result, a demographic impact affecting professionals may further increase the pre-existing skills gaps.

4.2.4 Developers

Direct economic impact

Developers were **not aware of any direct HIV/AIDS demographic and/or economic impact on their organisations**.

However, based on our research, developers operate as small specialised team, where each individual fulfils a particular function or where the companies are even smaller units, the bulk of the functions are held by a handful of professionals. A demographic impact on these delivery agents would easily translate into an economic impact on the company as a whole. In this context, the smaller the company units, the less the ability of employers to provide medical and social benefits to employees. In terms of independent consultants, medical cover is voluntary. This suggests varying degrees of vulnerability to economic impact arising from medical and other social benefits only.

For self-employed developers, their inability to work directly translates into a direct loss of income and threatens their medical cover. More importantly, as discussed in the sub-section relating to the economic impact on bridging finance institutions, an inability to work means that projects grind to a halt, which delays the achievement of milestones, draw-down payments, and in turn, increases the duration of bridging finance loans and their cost. This further decreases profit margins and threatens the financial viability of the project, as well as that of the company.

Derived/”Knock-on” impact

The role of developers as bearers of most of the financial risk in the developer/contractor supply system, means that they are vulnerable to demographic and economic impacts on all the other delivery agents. For instance, an economic impact on a bridging finance institution may translate into higher interest rates and greater rigidity in assessing applications for bridging financing. An increase in the cost of bridging finance would make shortening the duration of housing projects a pre-requisite for ensuring their financial viability. This may, however, be at odds with the current reality of the planning and land assembly component where a demographic impact would result in further delays in an already time-intensive environment. Similarly, it is likely that the problems experienced in terms of the management and disbursement of subsidy draw-dawns may be exacerbated by a demographic impact on provincial officials responsible for approving subsidy drawdowns.

Demographic impacts on beneficiaries are affecting developers by increasing levels of absenteeism at the time of occupation of the top-structure. In terms of provincial regulations, this amounts to up to 40% of the total value of the subsidy being frozen. The outcome of this situation is complex. Firstly, it delays the payment of the subsidy drawdown associated with the transfer of the property. Secondly, it also delays the construction of the top-structures as developers now prefer to wait for transfer to be completed before initiating this component. Where the intended beneficiary cannot be found, this also results in specific sites being “frozen” for the duration of the process of cancelling the subsidy application and allocated beneficiary, finding a new beneficiary, assessing his or her eligibility and applying to the provincial Department of Housing to approve a subsidy for a particular individual. It takes between 2 to 6 months to complete the process of “unfreezing” the sites and their subsidy. This has implications in terms of holding costs, the opportunity cost of finance and price escalation. Interviewees estimated the total cost of beneficiary absenteeism to be between R600 and R1 600 per site.

Further, HIV/AIDS demographic impacts among beneficiaries also disrupts the role of the beneficiary committees in projects. Interviewees mentioned this as particularly concerning as it affects the smooth running of the beneficiary participation aspects of projects - an important precondition in terms of avoiding political risks associated with such processes.

Where demographic impacts translate into economic impacts among contractors and sub-contractors, these may have to be carried by the developer whose profit margins may further reduce. Alternatively, these economic impacts may be passed on to the end product, in terms of a decrease in the quality of the top-structure (because subsidy amount is fixed), which would increase the post-delivery liability of developers.

Responses to economic impact

The avenues for indirect impact on developers are plentiful. However, most interviewees signalled that in the current context of housing delivery, **HIV/AIDS may only be one of the factors which would drive developers out of an already financially risky environment**. Indeed, interviewees explained that their ability to continue operating in the market was under severe strain. The coping mechanisms devised by developers to their already arduous economic situation have been primarily one of **flight into other construction sub-sectors or into other economic sectors**. Those that are able to continue operating in the market have had to be particularly innovative and strategic. They have entered into risk-sharing

strategies with other delivery agents, in particular municipalities and housing support NGO's. They have developed niche markets and sought to minimise their overheads by shedding their workforce. This drive for efficiency has been their main reason for survival; yet, in the context of HIV/AIDS this may also be what makes them least able to further specialise and restructure to accommodate possible HIV/AIDS impacts.

4.2.5 Contractors, sub-contractors and labour

Contractors and sub-contractors reported both a demographic impact and a measure of economic impact.

Note on the availability and source of labour

In terms of the absolute numbers of construction workers, a demographic impact may not necessary result in the unavailability of labour. Indeed the construction workers unions explained that the bulk of their membership base is not currently employed in the sector. Based on the estimates given by the unions, up to 75% of their membership is not formally employed at any given time.

However, the unions estimated that this figure is primarily affecting semi-skilled workers and general workers, as well as support staff such as cleaners and clerks. These functions are typically resourced at the project level by workers from the beneficiary community, recruited on a casual basis. The unions also noted that higher skills levels, such as those held by foremen and project managers are actually under-resourced, and that the decline in training activities has increased the value of such skills.

This suggests that labour availability, in an environment, which appears to be over-traded, may not be detrimentally affected by HIV/AIDS impact. Whilst this may be so in terms of unskilled labour supply, the availability of semi-skilled and skilled labour may be undermined by the demographic impacts of the disease. Importantly, it is precisely this type of labour, which is particularly exposed to contracting the virus, because of its high levels of mobility from site to site causing them to be away from their regular sexual partners for prolonged periods of time.

Direct impact

As stated in the previous section pertaining to perceptions and evidence of demographic impacts of HIV/AIDS on delivery agents, contractors and sub-contractors are experiencing different extent of demographic and economic impact.

Firstly, the type of labour which they rely on, differs between civil contractors and construction contractors. The former tends to be highly skilled, permanent or contract employees, with some form of medical aid support and high levels of mobility. Among such types of employees prevalence appears to be high, except in the socially conservative Moslem community in the Western Cape. Because of the limited skills pool in this sub-sector and the overall decline in training activities, a demographic impact is likely to translate into a direct economic impact on such organisations.

Incidentally, contractors in the Western Cape case study reported that the demographic impact experienced in other provinces is resulting in their own employees being "poached" and is translating into an economic impact on their operations over time. The extent to which they are able to retain labour becomes highly dependent on their ability and willingness to increase their wage bill especially

when competing against the high return civil engineering markets in the mining, industrial and commercial sectors within and outside South Africa[21]. Other contractors are adopting a policy of further reducing their labour force, to avoid direct economic impact in terms of benefits and loss of productivity of affected employees. However, this approach may in fact prove misguided, as the scarcity of such skills profiles means that they are difficult to source, although they play a pivotal role in the clearing and servicing of sites.

Among construction contractors and sub-contractors, demographic impacts translate into demographic impacts differentially according to the skill levels of labour. Most construction contractors explained that a demographic impact on unskilled and casual labour would have a negligible economic impact. They explained that the low-levels of specifications mean that skills level requirements are low, and that training to perform such skills is minimal. Secondly, because labour is casual, with no form of contractual obligation to provide medical support and practices where labour is paid per task performed rather than per hour of work, direct costs to company are assumed to be limited. In addition, the use of local labour is often seen as an opportunity for contractors to cut the wage for general and semi-skilled labourers to well below the minimum hourly rates (between R5 and R12 and R8 to R15 respectively depending on the province and the level of enforcement of the regulated minimum rates).

However, it is important to consider that in the current context of local procurement policy, the practice of having to train and rehire new labour on a project by project basis simulates some of the outcomes of a demographic impact on companies. It is significant that contractors and sub-contractors identify this requirement as a burden in terms of productivity levels and a compromise on the quality of products delivered. In particular, this is one of the factors identified by contractors, which is compromising the financial viability of operating in the low-income housing market. Further, interviewees indicated that a loss of productivity in terms of the contribution of unskilled workers would not necessarily result in a direct cost to the project, as such labour is paid per task rather than time.

In terms of skilled and semi-skilled workers, demographic impacts are more likely to have an immediate economic impact. Finding quality semi-skilled and skilled labour is generally difficult. Interviewees explained that this was due to the long lead time required to move from unskilled to skilled level, the poor conditions of employment (including physical hardship) and the overall lack of glamour of the sector. Importantly, they emphasised developing semi-skilled labour on an ongoing basis is important to the long-term development of the overall construction skills base- as it is from within its ranks that the future skilled labour is being formed.

Interviewees differentiated between two types of labour: a skilled person who is the sub-contractor, and a skilled person who is in the employ of a sub-contractor. In terms of the latter, the economic impact would be felt in terms of a decrease in productivity level per project, given in particular the limited availability of skilled labour- irrespective of HIV/AIDS. Because such types of workers are responsible for managing progress in terms of the procurement of materials and the deployment of labour, absenteeism and mortality result in a much more pronounced loss of productivity. This creates delays, which result in additional costs to companies in

[21] One of the Unions approached explained that at any given time, close to 35% of their members who fall within the skilled and semi-skilled category are working outside South Africa.

terms of escalations in the price of materials, overall overhead costs on site, holding costs and the cost of finance.

Where HIV/AIDS morbidity and mortality affect sub-contractors, the impacts are far more drastic. In such instances, the loss of construction skills can be compounded by a loss in construction management and business skills. This meant that the business units are annihilated in the process.

Furthermore, contractors who are responsible for procuring materials would also experience a derived economic impact of HIV/AIDS. The overwhelming majority of respondents within this category of role-players explained that they would not be in a position to shoulder further economic hardship. Given the high rate of liquidations in the sector this appears to be justified.

Responses to impact

When probed about their current and expected responses to demographic and economic impacts, interviewees mentioned a range of responses.

Prevention activities

In respect of current activities, respondents from larger companies cited AIDS awareness campaigns for their employees (which are often undertaken under the aegis of the unions), as well as the distribution of condoms to workers on payday and on Fridays. A leading South African construction and civil contractor explained that the company has set up its own HIV/AIDS clinic to provide counselling, treat STD's and opportunistic diseases, and offering hospice facilities for its terminally ill labour. Only few of the contractors interviewed, typically the larger, more institutionalised companies have an HIV/AIDS workplace policy. Most of the small contractors interviewed as part of the provincial surveys to date noted that they found it difficult to engage with labour on the matter as they felt that this amounts to dabbling in their employees' private lives. Most women contractors interviewed explained that they felt uncomfortable approaching the subject with their mainly male labour force.

Avoiding the risk of economic impact by leaving the sector and through casualisation

One of the dominant responses was to leave the low-income housing market. Further casualisation of skilled and semi-skilled labour was also identified as an option to avoid direct cost to company.

The erratic availability of construction work, for casual and self-employed workers, diminishes the value of on-the-job training. This is in contrast to the old apprenticeship system, making it unlikely that new generations of semi-skilled labour will be able to pass on adequate skills to future workers. This will result in a progressively deteriorating standard of skilled work on site.

Managing the cost of impacts by cutting down on other costs

Decreasing the levels of specification on the process and product (cheaper materials, labour and levels of finish) was identified as a possibility although interviewees were concerned that national government's minimum norms and standards would restrict their ability to do this.

Increasing retail price of the product

Increasing the price of the product was seen as a more sustainable way to ensure the viability of the production process. The interviewees motivated this scenario, by arguing that where other contractors experience similar levels of stress, they

increase their costs accordingly, resulting in an overall adjustment in the market. This in turn would force an increase in the value of the subsidy.

Paradoxically, a number of interviewees noted that the extent of over-trading is such among medium and small construction contractors, that they are willing to sacrifice profit margins and take on projects with uncertain financial viability. This reveals that instead of adjusting the real value of the prices upwards, most contractors are actually forced into reducing the real value of their prices.

What this suggests, for the future, is an increase in the number of projects being undertaken on an unsound financial basis and in turn, the attrition in the ability of contractors, irrespective of their size or financial standing, to continue performing their role in any supply system.

4.2.6 Housing support NGO's

Direct impact

The extent to which housing support NGO's reported a demographic impact on their workforce directly was limited. However, such occurrence was reported in two organisations in the course of the provincial surveys.

The proportion of the labour force in such institutions which comprise young professionals, means that the organisation may be more exposed to HIV/AIDS prevalence. Typically, such organisations provide some form of medical benefit to employees, as well as generous leave conditions. This means that the direct costs to the organisation of a demographic impact among their workforce may be proportionally higher than in other types of organisations offering similar technical support services.

Some of these organisations have in-house skilled construction workers and project managers who provide hands-on technical, subsidy management and process facilitation support to beneficiaries during the construction process. The combination of such skills is seldom found among technical project managers who tend to lack social facilitation and organisation abilities, which makes employees who hold such skills indispensable.

Furthermore, one of the key institutional weaknesses affecting non-governmental organisations active in the low-income housing sector is an ongoing brain drain of personnel to the public and private sectors. Interviewees reported extremely high turnover levels, and explained the difficulty of retaining professional skills. This means that those types of institutions may find replacing and retraining labour, in the context of HIV/AIDS particularly onerous. Overall, because of the existing limitations of their human resources pool, it is likely that such organisations would be hampered in the extent and quality of the role they perform in the housing supply systems. In one organisation were a key implementation role-player died suddenly of an AIDS-related illness, a year ago, it was reported that the organisation has not yet overcome the loss it suffered in terms of technical and process know-how.

Derived/"knock-on" impact

The Housing support NGO's reported widespread evidence of demographic impact of HIV on beneficiaries. However, whereas other delivery agents were able to reflect on how HIV/AIDS demographic impact could result in a direct economic cost, the focus of NGO's was placed firmly on the social capital costs of the epidemic.

Typically the role of housing support NGO's is one which is aimed at complementing and facilitating the roles of beneficiaries in the PHP supply system. In this process, the roles performed by beneficiaries are not remunerated out of the subsidy. Where beneficiaries are unable to perform these roles they would have to be performed by other role-players who would be remunerated out of the subsidy. Quantifying the financial value of the roles of social capital is not a straightforward endeavour as it varies in intensity between projects. It is however reasonable to assume that additional support requirements would have to be met by the support NGO's under a scenario above.

In terms of the increased subsidy amounts introduced in May 2002, where households opt not to follow the PHP process, they are required to make a financial contribution of R2 479. We believe that this nominal amount only provides an indication of the cost of social capital. In fact, our case study findings suggest that the full extent of the roles performed by beneficiaries in the course of PHP processes are critical to the implementation of housing projects.

The ability of HIV/AIDS affected individuals, households and communities to continue performing these roles may be significantly affected by the human and social side of the epidemic. While the household impacts may only begin when a member of the household starts to suffer from HIV-related illnesses, the compounded impact which individual households' impact may have at the settlement level may be extremely debilitating. This would make attaining sufficient levels of social cohesion, for housing processes to take place, difficult. In addition, where the impact affects beneficiary leadership and individuals in a particular settlement who have technically skilled, the ability of such processes to move forward can become seriously compromised.

Responses to impacts

In respond to these impacts, most NGO's have begun assessing the impact of HIV/AIDS on their operations, primarily in respect of the impact experienced by beneficiaries. Their responses also include undertaking some HIV/AIDS awareness activities targeted at their workforce and beneficiaries.

4.2.7 Housing management institutions

Direct impact

The **extent of evidence of economic impact of housing support NGO's is negligible and similar to that experienced by housing management institutions**.

Overall, while respondents were not directly aware of a demographic impact, they were aware that such an impact may have dire consequences for their ability to operate successfully. They linked this perception to the limited experience of the institutional supply system, which remains fairly experimental in nature.

As a result of this situation, the skills base required to perform the role of the housing management institution is limited. In particular, one interviewee noted that the skills required to perform these roles were primarily acquired on the job. Such organisations tend to have permanent employees who have access to medical and social benefits. The cost to the company of providing these benefits may increase in the context of HIV/AIDS.

Importantly, in the case of housing management institutions, individuals within the organisation take responsibility for specific projects, in terms of managing the construction process, securing financial and institutional contributions, overseeing the recruitment of beneficiaries, managing the cash-flows of housing stock and overseeing tenure arrangement with occupants. The intimate rapport which these individuals have with specific projects and beneficiaries makes them pivotal to the financial and operational viability of the organisations.

In addition, such organisations also rely on highly specialised contributions from architects and urban designers to meet the quality requirements of the housing products developed in the institutional supply system. Some of these organisations are pioneering new tenure forms and championing legal reform to support the development of institutional housing processes. To perform this role, they also rely on the support of a handful of specialised legal experts who have built their knowledge of the sector over the last decade. Loosing access to such scarce resources would greatly undermine the ability of these institutions to perform their role. In spite of this awareness, these organisations have not yet developed strategies on how to address the demographic impact of HIV/AIDS on their own institutional vulnerability.

Where a greater level of action is being taken, is in respect of beneficiaries, from whom ongoing financial contributions are required to service and repay loans taken for the construction of housing units and to support the operational costs of the housing institutions. There, the first concerns to emerge in respect of beneficiaries were linked to experiences of beneficiaries not being able to meet their obligations because of the household economic impact of HIV/AIDS. Concerns were also reported in terms of how to ensure continued housing access of the dependants of beneficiaries affected by HIV/AIDS morbidity and mortality. A concern for cost recovery to ensure the continued financial viability of the housing institution is not easily juxtaposed with social concerns over continued access to a housing benefit, especially when the occupant is unable to meet financial obligations.

Responses to impact

Initially, a number of institutions had anticipated that a life insurance mechanism may effectively resolve the matter. However, it is now envisaged that a disability benefit should be sought to accommodate the socio-economic impact of HIV/AIDS (morbidity in particular) on beneficiaries This approach tends to target the beneficiaries as recipients and may not entirely recognise the depth of the socio-economic impact of HIV/AIDS on households and on groups of beneficiaries who are stakeholders and role-players in the ongoing management the housing.

4.2.8 Materials manufacturers and suppliers

Direct impact

The manufacturers of building materials, who hold a monopoly, **reported experiencing both a demographic and an economic impact**, on the direct costs to the company.

Some of the direct impacts mentioned by respondents have included, loss of productivity (in particular among semi-skilled workers), low staff moral and increased death and pension benefit claims. The additional cost of the economic impact was not disclosed by the interviewees.

The materials manufacturing sub-sector is highly capital intensive and requires fairly high skills levels. Current estimates of the capacity of both equipment and labour suggest some ability to accommodate lower productivity levels, although some downsizing has occurred within specific companies in an attempt to increase productivity levels in the past two years.

Some of the materials suppliers interviewed to date as part of the provincial assessment reported an economic impact arising from increases in compassionate leave. In Limpopo, it was noted that employees who are elders in their communities are particularly affected.

Responses to impact

Materials manufacturers have specifically taken steps to manage the impact, including developing a workplace HIV/AIDS policy and reducing their exposure to demographic and economic impacts. In addition, the interviewees mentioned the possibility of introducing anti-retroviral treatment for specific skills levels and change the production process to increase the number of contract-based employees across skills profiles.

Furthermore, most large materials manufacturers have HIV/AIDS workplace policies, but interviewees noted that these are often focused on awareness and prevention activities rather than disease management.

The cost of materials is regularly subject to double-digit inflation rates. This stems from increases in the price of petrol (affecting both production and transport of raw and processed materials), and from the highly oligopolistic nature of the sector, where price-fixing and market-sharing agreements among competitors are rife. Should the cost burden be passed onto the wholesale price of materials, this will affect the cost of production of the services and top structure components. This added cost would in turn impact on the ability of other delivery agents to perform their delivery role within the limits set by the subsidy.

The extent to which materials suppliers are responding to existing and anticipated HIV/AIDS impact is affected primarily by their level of awareness of HIV/AIDS. Those supplies that are taking steps to manage the impacts have emphasised multi-skilling and prevention activities among their workers.

4.2.9 Institutional role-players

As stated in the section pertaining to perceptions and evidence of HIV/AIDS prevalence and demographic impact on delivery agents, we are aware of some demographic impact of HIV/AIDS on government role-players. The extent to which this may be measured as a direct economic cost is unclear. This stems partly from

the fact that such institutions do not generally view themselves as economic units and their performance is only rarely assessed as such. However, a demographic impact of HIV/AIDS among government role-players will possibly have the highest relative direct cost in terms of medical and other benefits, per worker on government institutions, given the level of cover and benefits granted to their workforce. In terms of the provincial surveys undertaken, the costs of an employee being declared medically unfit to work include the payment of the employee's full pension allowance and up to three years of wages.

In addition, the ease of replacement of labour in the sector is uncertain. Currently, vacancy levels for key roles in the housing supply system are high in all spheres of government. We have also noted as part of the case studies and the provincial interviews that turnover is particularly high. Both PHP case studies highlighted that this is a particularly disruptive trend for the implementation of the PHP system.

Critically, interviewees reported that the performance of roles in terms of subsidy administration, the land assembly and planning where the municipality acts as the developer, is already a source of stress on the operations of other delivery agents in the supply systems. Furthermore, a basic assumption of most HIV/AIDS economic impact analyses is that there will be a shift in budgetary allocation to support the health and welfare sectors and a decrease in revenue generation from tax collection. These two factors combined suggest a possible decrease in the budgetary allocation to housing delivery. However, the politicised nature of housing delivery issues makes this prospect unlikely. Furthermore, given that the bulk of low-income housing delivery takes place primarily within the ambit of the housing subsidy, this prospect would directly affect the flow of funding to support the role performed by the delivery agents, which may in turn shy away from the sector entirely.

Whilst action is being taken by some provincial and municipal role-players in respect of HIV/AIDS infected beneficiaries, and to a lesser extend HIV/AIDS affected households, in the housing delivery sector. However, the absence of an open governmental position concerning the demographic and economic impact of HIV/AIDS on its own workforce, and in turn on civil society- let alone delivery agents in the housing supply systems- requires urgent attention.

4.2.10 Section summary

The following table summarises the evidence of demographic and economic impact on delivery agents and their vulnerability to economic impact on others in the supply system.

Table 6: Evidence and vulnerability to direct and derived economic impact

Delivery agent	Evidence of direct economic impact on self	Evidence of vulnerability to demographic and economic impact on self and others
Bridging finance	N/A	Sales reps and technical personnel Government role-players Developers and contractors
End user finance	N/A	Sales reps Beneficiaries
Developers	N/A	Self Contractors Beneficiaries

		Government role-players Materials manufacturers and suppliers
Contractors and sub-contractors	Impact on availability and reliance on skilled workers	Business head Skilled workers Beneficiaries Government role-players Materials manufacturers and suppliers
Labour	Ability to work Sector's medical aid Sector's provident and pension funds	Employers
Housing development support NGOs	Some (particularly where technical staff involved)	Self Beneficiaries
Housing management institutions	N/A	Self End-user finance institutions Beneficiaries
Institutional role-players	impact on medical costs	N/A

4.3 Issues emerging from the responses to experience and expectations of economic impact

Few of the respondents had assessed the direct economic impact which they were experiencing or anticipating to experience. However, it was clear that those institutions that had directly experienced some form of economic impact had already taken measures to protect themselves from such impacts or were in the process of doing so. Among those who had not yet experienced a demographic and/or economic impact, a common misconception was that the economic impact of HIV/AIDS would primarily be limited to the cost of mortality, rather than morbidity. Arguably, for a range of delivery agents the socio-economic cost and implications of morbidity of HIV/AIDS-affected labour and client base may, in fact, be much greater than that of mortality.

What also became clear was that the smaller, less institutionalised delivery agents were the least able to dis-aggregate and quantify the negative impacts of HIV/AIDS on their interests from the generally hostile economic and operational environment in which they trade. These were also the organisations which were the least able to undertake some form of strategic planning to address demographic and economic impacts. As a result, the extent to which they had envisaged any response to the demographic impact of HIV/AIDS was limited.

The majority of interviewees had some level of awareness about their own institutional susceptibility and economic vulnerability to HIV/AIDS impacts. However, their ability to translate a demographic and/or economic impact on other delivery agents within the same component and/or system, into an economic impact on their own role and interests, was generally lacking. In fact, the extent to which delivery agents were aware of their position within a system, beyond their immediate client or service base, was very low. This meant that whereas some delivery agents could conceive and envisage a knock-on impact on themselves resulting from impacts on their immediate client or service base, others did not consider how impacts elsewhere in the system may in fact amplify or exacerbate their situation.

The type of current and anticipated responses to HIV/AIDS impacts can be grouped into three categories:

- Focusing on prevention of risk behaviour activities, including HIV/AIDS awareness campaigns and the distribution of condoms, rather than seeking to alleviate and/or manage some of the causes of the risk behaviour.
- Seeking to shelter one's own organisation from the direct costs of HIV/AIDS, by leaving the sector, using risk assessment as a criteria for recruiting new personnel, casualising labour perceived to be at risk and limiting access to health benefits and other social benefits.
- Seeking to manage, rather than avoid, the economic impact of HIV/AIDS through interventions such as formulating a HIV/AIDS workplace policy, counselling and life-style support for affected workers, providing anti-retrovirals to key personnel and supporting multi-skilling and diversification of their own labour force.

To date, most responses have been focused on risk avoidance and short-term coping mechanisms rather than longer term prevention and management strategies

Of concern, was the significant number of delivery agents who explained that should the economic impact of HIV/AIDS exacerbate existing weaknesses in the supply system, their ability to absorb increases in the cost of production of their role, is limited. This type of response is symptomatic of the conditions in which a large numbers of delivery agents find themselves in terms of the role they have to perform in the supply systems.

5 ECONOMIC IMPACT OF HIV/AIDS ON THE SUPPLY SYSTEMS AND DETERMINE THE FINANCIAL FEASIBILITY OF THE SUPPLY SYSTEMS

The following sections draw implications arising from the demographic and economic impacts on the different delivery agents. It looks at how they impact on each supply system, with particular reference to their respective financial feasibility.

5.1 Areas of economic vulnerability and mitigating factors in the Developer/Contractor supply system

The developer/contractor supply system operates according to a financial logic of profit maximisation. In the current context of the construction sector, this means that operational and institutional leanness and efficiency is a pre-requisite for survival. This translates into practices of risk avoidance and the need to remove superfluous operating and capital costs. Under such conditions, the ability of role-players to accommodate the cost burdens associated with the demographic and economic impact on themselves and on others within the system is severely restricted.

In particular, the demographic and economic impact of HIV/AIDS on specific components and delivery agents whose contributions is critical to ensure that the supply system operates effectively, needs to be re-asserted. This concerns:

- The role of government role-players in facilitating and regulating the implementation of the supply system (both in terms of the subsidy administration and the land assembly and planning roles);
- The availability of bridging finance to resource the supply system;
- The attrition in the specific skills profiles required to implement the construction process efficiently; and
- The extent, to which the rigidity and specificity of the system, with respect to required process and product, limits its ability to absorb or accommodate an economic impact.

Firstly, the system is extremely reliant on the effective functioning of the subsidy administration system. This role affects the ability of developers and contractors to afford the cost of bridging finance, the financial viability of specific projects and more importantly for the system, the ability of those delivery agents to continue operating in the field. In the absence of a targeted Provincial response to existing inefficiencies in the performance of this role, it is fairly reasonable to expect that the demographic impact of HIV/AIDS will exacerbate the weakness of this role.

Similarly, capacity shortages in the land assembly and planning component, which currently lead to costly delays, would be further aggravated thereby increasing the cost of finance, holding costs on land, overhead costs of companies and escalation on the cost of materials and labour. These would have the net effect of squeezing profit margins for developers and contractors, which would have a compounded impact*, inter alia*, on their ability to repay their bridging loans.

The exposure levels experienced by bridging finance institutions themselves, in particular parastatals, mean that they are extremely vulnerable to direct and indirect economic impacts on their client base. In the short-term, this may result in financial losses, although it is expected that these institutions would adjust their lending practices to avoid risk. This typically involves opting to shun a particular market, something most private sector organisations have already opted to do in respect of the low-income housing supply systems. Alternative coping mechanisms would

include managing risk by shortening the duration of loans, and raising interest rates. Given the already fragile ability of borrowers to meet existing lending conditions, and still make a profit, this scenario would have a devastating impact on the ability of the developers and contractors to continue performing their role.

In and of itself, the emphasis of the supply system on labour-intensive production for the top-structure and on capital intensive production for servicing sites and the manufacturing of materials is not a reliable indicator of economic vulnerability to HIV/AIDS economic impact. Rather, the nature and availability of specific key skills to perform pivotal roles in the components of the supply system, is a greater benchmark of economic impact vulnerability. Importantly, in the developer/contractor supply system those skills are already in short supply and delivery agents operating in the system have to compete with other construction sub-sectors to secure their contribution. This means that labour mobility and migrancy, two key risk factors of susceptibility of a demographic impact of HIV/AIDS, within those skills profile is high.

The widespread and ongoing process of casualisation of labour, which has affected the construction industry since the mid-1990'sis seen as a survival strategy for private sector operators who strive to reduce their wage bills. Casualising labour further is one of the key responses to a direct cost to company of HIV/AIDS impact of labour. While this type of response may shelter companies in the short-term, it would only aggravate the attrition of skills necessary to implement successfully the supply system.

The developer/contractor supply system is the most rigid of all three systems. Because it is primarily implemented through the project-linked subsidy, it has to supply with limitations of the subsidy. Even taking into account the increased subsidy, some of our interviewees reiterated that the profit margins in the sector are so low that they would continue divesting from it. This means that the costs to delivery agents and components cannot easily be passed onto the subsidy. Although the credit-linked subsidy option may provide an opportunity to leverage additional resources for beneficiaries to complement the subsidy amounts, household affordability is likely to be affected severely by the socio-economic impact of HIV/AIDS at the household level. This together with risk avoidance measure taken by end-user finance institutions makes such a prospect unlikely.

Being unable to pass on a cost increase to the subsidy would then leave delivery agents with two primary options, either to avoid the sector entirely or to pass on the cost to the process and/or the product of the supply system. This may result in measures taken to limit some of the social value-adding requirements of the housing delivery process, such as a shift from labour to capital intensive production processes (in particular for the top structure), or a decrease in the quality and quantity of output per unit of production (i.e. smaller houses, with lower quality of finishes and materials). The presence of process and product specifications for local procurement requirements and minimum norms and standards, makes this prospect unlikely.

5.2 Areas of economic vulnerability and mitigating factors in the People's Housing Process supply system

The PHP supply system concerns itself with process and product maximisation. This means that it is geared to ensure that the performance of the different delivery agents' roles ensure the greatest level of locally defined contributions (e.g. from beneficiaries) and that high proportion of the subsidy is used on materials. The former translates into high social capital contributions whose value is not borne

directly by the housing subsidy and therefore not easily converted into a monetary value, and is critical in ensuring the financial feasibility of the system. In addition to considering how HIV/AIDS demographic and economic impacts may affect social capital it is also critical to consider the contributions of other delivery agents and components.

The demographic and economic impact of HIV/AIDS on specific components and delivery agents whose contributions is critical in ensuring that the supply system operates effectively, include in particular:

- The institutional limitations of the delivery agents supporting the social capital contributions from beneficiary households;
- The socio-economic vulnerability of social capital to the impact of HIV/AIDS; and
- The vulnerability of the system to economic impact on other components, which affect the production costs of the system.

The system can accommodate a very limited degree of inefficiency from delivery agents in the provinces responsible for subsidy administration. This is because subsidies are often transferred in block to a special purpose vehicle set up by Housing Support NGO's or municipalities facilitating PHP processes. However, this only means that this function is decentralised and allocated to delivery agents who may themselves be affected by demographic impacts. In the previous Chapter, it was identified that the available skills pool to perform this role among Housing Support NGO's is limited. In terms of the skills pool available to perform other support roles, in particular process facilitation and community based project management, similar concerns should be raised, especially in a context where the existing ability of such delivery agents to retain skilled labour, over time, is low. Further, in terms of implementation support, the case studies identified that this system is highly vulnerable to changes in the implementation of the regulatory framework. This in turn is affected by the extent to which officials in government (at the provincial and local sphere) understand and support the PHP approach and requirements. It is at this level, that the demographic impact of HIV/AIDS on institutional role-players would probably have the greatest impact on the PHP supply system.

This system has not made extensive use of bridging finance institutions, save for the Utshani Fund bridging finance mechanism, targeted at end users. As payment for work undertaken or contributions procured, occurs on pre-agreed milestones, or even simply on the submission of invoices to the delivery agent responsible for subsidy administration, the extent to which bridging finance is a requirement in such processes is limited. Importantly, whilst this is made possible because such processes have occurred primarily on serviced sites, the extent to which this process would easily be augmented to cover land assembly and planning, as well as the servicing of sites in the absence of some form of bridging finance mechanisms is unclear.

The PHP supply system is designed to be labour-intensive and to maximise the contributions of beneficiaries in the form of labour, household level decision-making and community level mobilisation and support. This is broadly the scope of the social capital required for this system to operate. The socio-economic impact of HIV/AIDS will precipitate dramatic levels of household and community stress. In the short term, household affordability will be affected by loss of income and increased expenditure to cover the costs of morbidity and mortality. This may entail a decrease in the ability of beneficiaries to participate in construction activities. In addition, evidence has already emerged that where HIV/AIDS demographic and economic impacts affect the local level leadership and technical know-how in the beneficiary community, project progress becomes significantly hampered.

At the community level, it is likely that socio-economic impacts would be amplified as informal support networks become weakened, which would in turn limit the levels of social cohesion. Paradoxically, the process maximisation objectives of this system, where community development is an intrinsic part of housing development, may in fact provide a platform for affected beneficiaries and communities to develop coping mechanisms to manage some of the socio-economic impacts they experience. Indeed, by institutionalising locally-defined community development systems, the PHP supply system provides an avenue for developing and embedding measures to enable households to engage in HIV/AIDS prevention and impact management activities and to formulate mutual support mechanisms that build on existing networks and systems. For example, the People's Dialogue has taken steps to implement an HIV/AIDS and substance abuse support clinic in Philippi, Cape Town.

Finally, although the PHP system offers flexibility in the duration of the construction process and the quality and quantity of the housing stock produced; in practice, beneficiaries tend to concentrate production costs on those items that directly affect the size of a housing product. Typically, these include construction materials and labour, although the total labour costs may be affected by varying degrees of sweat equity contributions made by the beneficiary household or group of households. Concerns over profitability levels may be secondary in terms of the operational objectives and outcomes of self-help housing processes. Instead, greater focus is placed on achieving cost-maximisation to the benefit of the product, both in terms of quantity and quality. This means that the profit maximisation logic of the private-sector construction industry is not necessarily a feature of the self-help model. However, vulnerability to cost fluctuations, as a result of HIV/AIDS impacts means that some of the objectives of this housing delivery model may be compromised (i.e. higher materials costs may affect the size of housing unit).

5.3 Areas of economic vulnerability and mitigating factors in the institutional supply system

The institutional supply system aims to fulfil product maximisation objectives. This means that it is geared to facilitate the development of durable, high quality housing stock that attracts beneficiaries who can afford to contribute to the cost of the housing product on an ongoing basis. To achieve these objectives the supply system has to leverage additional financial resources and ensure cost recovery from beneficiaries to maintain the value and the attractiveness of the housing stock on an ongoing basis.

Consideration of how this system is likely to be affected by the demographic and economic impacts of HIV/AIDS on its delivery agents and components include:

- The reliance of the system on the provision of end-user finance;
- The tensions between cost recovery imperatives and the socio-economic impact of HIV/AIDS on beneficiaries;
- Limited specific technical skills pool for products, and post-delivery functions; and
- High quality products, but financial limitations.

The provision of end-user finance to housing institutions is a pre-condition for this system to operate. While end-user finance institutions are experiencing an increase in default rate which they suspect is partially linked to the economic impact of HIV/AIDS on households, they are concern that this economic impact will increase in future. This consideration is motivating ongoing research on how financial institutions should address the economic impact of HIV on loan holders.

In the short term, it is likely that end-user finance institutions will experience an increase in derived economic impact. Similarly, they are likely to tighten their lending conditions in the longer term. This consideration is particularly relevant if one considers the historical aversion of the financial sector to finance low-income housing. Without affordable access to end-user finance the preconditions for achieving the objectives of the institutional system may become unattainable.

Beyond the end-user finance requirements, which housing institutions interface with on behalf of beneficiaries, the ongoing management and maintenance of the housing stock poses the need for tight cost recovery mechanisms. This requirement is presently experienced as a difficulty for most housing management institutions in the current context of widespread retrenchments. Typically, it is estimated that a recovery rate of at least 90% is necessary for institutions to maintain a minimum level of financial viability. Again, the socio-economic impacts of HIV/AIDS on the beneficiaries of the supply system mean that household affordability levels to sustain these contributions on an ongoing basis may threaten the financial viability of performing this housing management role in the long-term.

Given the novelty of the system, skill acquisition in the sector is primarily experiential. This not only true of the professional workforce within housing management institutions, but also of the specialised professional skills which these institutions draw upon to conceptualise, prepare and implement institutional housing projects. A demographic impact on any of these role-players would immediately result in a skill vacuum, which may not be easily filled.

Finally, this supply system provides some flexibility in terms of the cost of the process and outputs. However, the extent to which increases in the cost of procuring the role of other delivery agents (e.g. contractors, bridging finance, materials, etc.) may be effectively passed onto the total cost of the housing product is unclear. Indeed, whilst this supply system is seen to best suit the R1 500 - R3 500 subsidy eligibility band, the monthly income requirements to sustain the ongoing cost of housing products valued above R60 000 may no longer be affordable to the subsidised market.

6 CONCLUDING STATEMENTS AND WAY FORWARD

The following section proposes a set of issues emerging from a consideration of the demographic and economic impact of HIV/AIDS on the supply system and what they imply for the implementation of the National Housing Policy. These issues were tabled as items for discussion in the course of the first report-back workshop held in early February. They are overriding findings pertaining to areas of stress between the economic impact of HIV/AIDS on the delivery agents and the supply system and the implementation of the Housing Policy, and include:

- **The demographic and/or economic impact of HIV/AIDS on specific delivery agents affects the performance, and the financial and institutional feasibility of the system as a whole.** This means that even if some delivery agents seek to shelter themselves from direct demographic and economic impacts in respect of their own labour force and organisation, the extent to which they can shelter themselves from derived/knock on impacts is limited.

- **HIV/AIDS is likely to aggravate the existing weaknesses (intrinsic vulnerabilities) of delivery agents and of the system**, in particular in respect of:
  - **The bridging finance component** (a pre-requisite for housing development operating from the premise of subsidisation);
  - The limited **technical and facilitation skills base** among role-players supporting PHP and institutional supply system;
  - The **inefficiency of the subsidy administration system** and **the planning and tenure management systems**;
  - The **precarious economic viability** of contractors, sub-contractors and labour operating in the implementation of the Housing Policy; and
  - The **inability of beneficiaries to meet end-user finance obligations** and/or to play a more active role in the face of household socio-economic impacts on household affordability and social capital.

- **The contributions of private sector delivery agents** (even where they play a role in the PHP and Institutional supply systems) **may be compromised in the long term, where direct and indirect impacts affect the cost of production of services and products in the housing supply system**. Given the limited ability of the delivery agents, components and systems to absorb such increases, private sector delivery agents will either avoid the sector or compromise the quality and extent of the services they provide.

- The **short-term risk avoidance responses of role-players to direct and derived/knock-on impacts** (through casualisation, shunning specific markets and limiting the extent of medical and other social benefits accessible to employees) **may exacerbate the impacts on the systems**. Two outcomes arising from this type of response are likely to be particularly damaging to the implementation of the housing policy:
  - A decrease in the availability of professional, skilled and semi-skilled labour over-time; and
  - The inability of the systems to secure financial resources over and beyond the subsidy amounts, either in bridging or end-user finance terms.

These issues are not exhaustive, nor necessarily conclusive and will receive specific attention in terms of the further steps in the research, namely the provincial surveys, the demographic and economic modelling and the formulation of lessons for the implementation of the Housing Policy and for delivery agents. Finally, it is expected

that the findings of the parallel demand-side research will be drawn upon to inform the analytical aspects of this supply-side research, where relevant and if they become available timeously.

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8 ANNEXURES: SUMMARY SHEETS OF RELEVANT ISSUES FROM THE LITERATURE REVIEW

8.1 Annexure 1: Historical context and background to the policy

The provision of shelter is commonly seen as key focus for development intervention. Initiatives such as the Habitat Agenda stress the significance which secure shelter and tenure reform hold in respect of bettering the quality of life of the rural and especially urban poor. In South Africa, access to adequate housing is not only seen as a developmental pursuit, but also as a right enshrined constitutionally. The deprivation of adequate housing and tenure rights experienced by the majority of the country's population, at the hands of the apartheid state, has meant that housing issues are intrinsically steeped in notions of political redress. The role which housing came to serve as -a catalyst for political activism against the regime bears testimony to this statement. Years of forced-removals and displaced urbanisation had stretched settlement and urbanisation patterns and forces to a splitting point. They had fomented living conditions characterised by over-crowing, lack of access to basic services, insecure tenure and housing rights, informal densification processes and shack-development. These situations were the outcome of historical policy decisions, on the one and; on the other they were also resulting from the influence of macro-level trends and dynamics occurring both within and outside of the country's boundaries, including rapid urbanisation in the developing world. The combination of these factors led to a situation where on the eve of the transition to democracy, the housing question was high on the agenda of contemporary policy-makers.

At the time, key concerns for housing were articulated around the following factors and considerations:

- Large proportions of the population were housed in conditions of insecure tenure with lack of access to basic service levels in overcrowded townships and settlements;
- Land invasions and people-led informal land development processes were seen to pose a threat to the political and economic stability of a country- on the verge of a highly complex and conflictual political transition process;
- Past housing policy formulation and implementation (from forced removals, segregated townships, unequal tenure rights development, and site-and-service schemes) had been state-led and resulted in highly contested delivery of inadequate housing and settlement development patterns;
- The fiscal conditions which had enabled the implementation of the segregated new-towns policy from the 1950s to the mid-1970s were no longer a resource which the state could draw upon.
- Internationally, approaches to development had come to de-emphasise the role of the state from that of a doer to that of an enabler. This meant that whereas the state had previously been acting as the primary role-player in the development of low-income housing; internationally, the role of the state in housing delivery had been reduced to a facilitator of delivery by other role-players, the private sector and communities.

These concerns led to a policy formulation process, which actually predates the transition to democracy. In the early 1990s, a platform for negotiating a consensual approach and policy for housing development had been set up, in the National Housing Forum (Land and Services Working Group). Most national policy is the outcome of extensive policy processes that have emerged since the transition to democracy, mostly from 1996 onwards. The Housing Policy White Paper, on the

other hand, published in 1994 was one of the first pieces of national policy to be set after the transition. As such, the approach and mechanisms developed in terms of the housing policy were mainly drawn up prior to the transition, in the course of policy debates occurring nationally in the early 1990's on how to address housing issues.
Critically, the repressive nature of the apartheid policy environment curtailed the emergence of vibrant debate around policy issues beyond the mainstream levels of powerful state and private sector interests. This has contributed to the definition of problem statements in respect of housing delivery that have focused on the manner in which the operations of the land and housing market should be facilitated. This approach emerged primarily in the definition of housing problems as the fragmentation of the apartheid city and the restrictions on the supply of land and housing. The identification of these factors as key to the resolution of housing demand and land invasions, led to the amalgamation of state intervention in the housing and land delivery sector with the corruption of operations of the market. In this framework, a pro-private sector, and supply-led rationale was developed which filtered- almost intact- through to the current policy and practice of housing "delivery". To this day the primary framework defining formal access to housing for the urban poor remain aligned to the approach developed in the Housing Policy White Paper.

8.2 Annexure 2: Housing Policy Review

Although the current policy framework is likely to continue guiding implementation for at least the remainder of the current Medium Term Expenditure Framework, as budget allocations have been committed to specific projects, there are clear indications that significant changes in policy orientation are in the pipeline. A policy review exercise is underway, which seeks to build on the experience of the implementation of the housing policy.

Salient features of the Review's proposals include:

- A shift in implementation approach from supply-driven to demand-driven processes;
- Greater involvement of beneficiaries and small contractors in the construction process, away from developer-driven processes;
- A reduction in the scope of benefits to be accessed from subsidy amounts to prioritise access to land, secure tenure and services, and facilitate incrementally construction of top structures;
- Promoting medium density housing development, and institutional housing solutions for those households who are able to afford housing products and financial commitments associated therewith, to ensure more integrated settlement patterns;
- Promoting beneficiary contributions to the costs of development through equity participation (either sweat equity or savings);
- Investigating financing mechanisms that provide for a package of contributions, by leveraging equity contributions, subsidies and lending finance; and
- Suggesting the need to envisage support measure for housing development that fall beyond the ambit of subsidisation.

These proposals are examined in greater detail below:

A major feature of the housing policy Review is the shift from supply to demand side measures. This approach is premised on the basis of an operational shift relating to the respective roles of the public and private sectors and civil society, where government supplies subsidies in response to articulated human settlement needs, as determined at local level through the municipal Integrated Development Planning (IDP) process, provided for in terms of the Municipal Systems Act. This means, in particular, that whereas housing funds had previously been allocated on a project by project basis by provincial departments of housing, the allocation of funding for housing development will need to be responsive to local demand as priority issues and strategic decisions made locally. In practice, this also suggests that access to housing funds will no longer occur via the intermediary of housing developers conniving with housing waiting lists (BRCS, 2001), but that access will be led by local communities and interest groups successfully articulating a housing issue- and corresponding solutions- as part of the IDP's multi-year housing programme. Thereupon, calls for proposals will be issued by municipalities for the development of housing projects based on considerations of value-for-money (Richards, 2001).

A key concern of the Review relates to the impact of the national norms and standards on the practices of housing development. A segmentation of the subsidised housing delivery market has developed, where different role-players take on different components of the delivery process. Developers focus on township development and the installation of internal services, and in doing so apportion the stipulated maximum amount of R 7 500 per site. The remainder of the process- the construction of top structures- is then relegated to subcontractors, and to individual subsidy beneficiaries themselves. To do so they have to adhere to the stipulated

maximum balance which many argue to be insufficient to build adequate housing (Richards, 2001). In addition, given the government's fiscal constraints, the Review also notes the limitations in the amounts which may be allocated per beneficiary in order to assist the majority of households in need of state-assisted housing.

To remedy this situation, the Policy Review envisages a number of related policy responses. Firstly, it proposes placing greater amount of responsibility on the beneficiaries to participate in the management of the construction process, and through a more direct involvement of municipalities to appoint contractors and developers on a competitive basis. Secondly, it refocuses government's intervention on enabling of access to housing opportunities and encouraging counter-contributions. In effect this means prioritising access to a basic housing benefit comprising secure tenure over a plot of land with access to basic services. The provision of top-structures is seen as an additional benefit which can be met overtime (BRCS, 2001).

In the spirit of promoting greater responsiveness of the housing policy framework, the Review also proposes to promoting medium density housing development, and institutional housing solutions for those households who are able to afford housing products and financial commitments associated therewith, to ensure more integrated settlement patterns. The target beneficiaries for these types of housing products are specifically seen as those who can afford to contribute in an ongoing manner to the repayments of the housing costs associated with the production of their housing units. The current operational mechanism which enables this type of development is the institutional housing subsidy. It is envisaged that medium density housing would be best produced by large developers and contractors, who have both the capital and experience of operationalising such housing delivery models.

To arrive to a greater level of beneficiary contribution, the Review proposes to convert the individual subsidy entitlement into a qualified entitlement, where households who aspire to adequate housing must contribute either in cash, through personal savings or employer contributions, or in kind, through sweat equity, undertaking home building activities themselves or collectively, in cooperation with others (BRCS, 2001). To do so, the Review proposes that the Subsidy Programme should be revised to make beneficiary equity contributions a prerequisite for subsidy assistance (Ibid.) In this new system, the subsidy 'amount' will be the same for all (bearing in mind that the amount itself will be product-driven rather than fixed) but different income categories will be asked to contribute either 'sweat equity' or savings, before accessing the subsidy, which would then be augmented by some form of lending finance (Ibid.).

Importantly, the Review also suggests the need to envisage support measure for housing development that fall beyond the ambit of subsidisation. Instead of a direct state intervention in the housing market through subsidisation, the Review proposes that to achieve long-term sustainability demands a progressive movement away from subsidies with greater emphasis placed on the support of beneficiary economic self-sufficiency and people-centred development (Ibid.).

These shifts in policy approach signal a critical redirection of the manner in which housing development has taken place over the past six years, away from a "delivery-driven" approach towards a localised development process, where beneficiaries are key role-players. Although the current policy framework is likely to continue guiding implementation in the short-term, the type of housing development process envisaged in the medium- to long-term will dramatically alter the manner in which

housing development is to take place in future. The implications of this shift for the research focus is manifold, they affect:

- Who will lead the construction process (beneficiaries and municipalities);
- How construction role-players will be called upon to undertake construction (through competing for projects identified in the municipal IDP process);
- What will be developed (a-sites and services in the first instance, and top-structures incrementally and b- medium density housing); and
- With what resources housing will be developed (with beneficiary contributions-sweat equity or savings and loan plus subsidy packages).

Whilst it will be important for the research to assess economic impacts of HIV/AIDS on the construction sector, as it operates within the ambit of the current policy framework (i.e. developer-led), much greater attention will have to be placed on projecting possible impacts on the manner in which HIV/AIDS is likely to impact on other construction processes, as envisaged in the Review. Under the current framework the key role-players have been developers and contractors, with limited input from communities in the form of unskilled labour. In future, the primary role-players will be the beneficiary communities, small contractors, organisations supporting self-help housing development processes and municipalities. Large developers will probably only be involved in the construction of medium-density housing through the institutional housing subsidy mechanism. The economic, institutional and operational capacities of these two groups of role-players are vastly different, so are the possible impacts, including economic impact of HIV/AIDS.

8.3 Annexure 3: HIV/AIDS Impacts on companies

According to Whiteside (2000) business should view HIV/AIDS as a tax that could add 7-8% to the cost of doing business. AIDS may have a significant impact on some firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Sunter and Whiteside (2000) identify the costs associated with HIV/AIDS at the company level to include:

- Increased absenteeism because of the ill-health of employees, time taken by workers who are also care-givers, and compassionate leave;
- Sagging workforce morale;
- Decrease in productivity linked to morbidity and a reduction in the ability of workers to take on physically demanding activities;
- Decrease in workplace safety because of morbidity-related fatigue;
- Increased replacement costs associated with training of new staff;
- Fall in the average age and experience of labour as new and younger recruits have to be mobilised;
- Employers may compensate for the expected loss of their workforce during apprenticeship and to counteract absenteeism by increasing the size of their workforce;
- The attrition of skilled labour pools will cause wages to rise;
- The communities in the neighbourhood of a business are needing more support to weather the crisis;
- Rising hospital, health care and health benefits costs;
- Personal loans granted to employees have to be written off in the case of AIDS deaths;
- Derived demand decreases thereby reducing growth in the volume of sales.

The Futures International Group (2000) conducted research in South Africa. A survey of 16 firms in South Africa asked whether the company prevalence rate was known, and whether HIV/AIDS had created any problems for the company. Only four companies returned the survey forms. A major platinum mining company stated that four employees were dying of AIDS per month. A major industrial company based in KwaZulu-Natal recorded a 31% increase in the number of ill-health retirements between 1995 and 1997; of these retirements, 17% of them were due to AIDS.

A study in South Africa examined the expected impact of AIDS on employee benefits, and thus on corporate profits. It found that at current levels of benefits per employee, the total costs of benefits would rise from 7 percent of salaries in 1995 to 19 percent by 2005

A recent set of estimates by the Metropolitan Life Insurance Company in South Africa predicted that the impact of HIV/AIDS would double employee benefits costs by 2005, and triple by 2010. Costs paid by firms would increase by about 15%. Total indirect costs would add a further 10% to the wage bill by 2005, and 15% by 2010.

Gencor, projected that HIV/AIDS-related health would reach 60 percent of the total by the year 2000, which is 15 times greater than the costs had been in the past.

Some smaller firms the loss of one or more key employees could be catastrophic, leading to the collapse of the firm. In others, the impact may be small. Firms in some key sectors, such as transportation and mining, are likely to suffer larger impacts than firms in other sectors. In poorly managed situations the HIV-related costs to companies can be high.

Sunter and Whiteside (2000) examine a published study performed on the impact of HIV/AIDS on a sugar mill with 400 workers of whom 96% are male. They note in particular that the monetary values of work due to illness, clinic visits and hospitalisation increase in the last two years, and that the average number of days lost due to illness in that period amounted to 27,7 day per year. Based on a costing of this average, and on considerations of the costs associated to the recruitment and training of new labour, the study estimated the cost per worker per year for the period under review at R 9 543. The breakdown of contribution of different costs factors were as follows:
Replacement workers: 28%
Lost productivity: 28%
Training: 5%
Hospitalisation: 1%
Clinic and physician visits: 10%
Absenteeism: 28%

Some companies in Africa have already felt the impact of HIV. Managers at a sugar estate in Kenya indicated that they could count the cost of HIV infection in a number of ways: absenteeism (8000 days of labour lost due to sickness between 1995 and 1997 alone), lower productivity (a 50 % drop in the ratio of processed sugar recovered from raw cane between 1993 and 1997) and higher overtime costs for workers obliged to work longer hours to fill in for sick colleagues. Spending on funerals rose five folds between 1989 and 1997, while health costs rocketed

8.4 Annexure 4: HIV/AIDS and the Macro-economy

Sunter and Whiteside (2000) argue, in macro-economic terms, the epidemic is not yet having a measurable impact, as HIV/AIDS' impact tends to be gradual, subtle and incremental. The first model developed to produce reliable estimates of the progression of HIV/AIDS in South Africa was the Metropolitan-Doyle model formulated in 1988. It has since been reviewed, and followed by other models including the Actuarial Society of South Africa Model. Most models are based on some form of projection of the impact of the HIV/AIDS pandemic on the population differential and apply the findings to macro-economic inputs and output projections based on specific economic linkages by reviewing demographic impacts on growth scenarios.

Such demographic and economic modelling work has been undertaken by ING Barings (1999 &2000), the Futures Group International (1999), the Bureau for Economic Research (BER) based at the university of Stellenbosch, Abt Associates (2000), Arndt and Lewis (2000), the Actuarial Society of South Africa, and the Health Economics and HIV/AIDS Research Division (Heard) of the University of Natal

The basic assumptions of these modelling exercises are that the epidemic impacts on the economy by:

- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced.
- A shortage of workers leads to higher wages, which leads to higher domestic production costs. Higher production costs lead to a loss of international competitiveness that can cause foreign exchange shortages. CPI inflation will pick up due to cost pressures on companies that are passed on.
- The costs of the epidemic are likely to cause a domestic savings squeeze.
- Lower government revenues and reduced private savings can cause a significant drop in savings and capital accumulation. This leads to slower employment creation in the formal sector, which is particularly capital intensive. Reduced worker productivity and investment leads to fewer jobs in the formal sector. The overall impact of AIDS on the macro-economy is small at first but increases significantly over time (Futures Group International, 1999).

General findings from the different modelling exercises are none-the-less cause for concern. GDP trends growth is forecast to be on average 0.3-0.4 percentage points per annum lower than on a no AIDS baseline. In their 1997-2010 impact simulation exercise, Arndt and Lewis (2000) find that GDP levels could be 17 percent lower in an AIDS scenario.

The Doyle-Metropolitan model's demographic projections for the next decade are:

Table 7: Demographic impacts of HIV/AIDS 1999-2010 (Denny-Demitriou, 2000)

	1999	2005	2010
% of SA workforce that is HIV+	11%	18%	21%

% of SA workforce that is AIDS sick	0.6%	1.8%	2.9%
New AIDS cases per annum	175 000 461	461 000	580 000
Number of AIDS orphans	153 000 955	955 000	2 000 000
Life expectancy of SA population – Female	54	43	37
Life expectancy of SA population – Male	50 43	43	38

Based on these projections, Moore (Cited in Denny-Demitriou: 2000) warns that the economy could be severely incapacitated by HIV/AIDS in less than a decade, and

"all economic sectors will be affected, particularly education, health and industries dependent on manual labour".

8.5 Annexure 4: Household Economic impact of HIV/AIDS

The Bureau for Economic Research points out that: 'the human and sociological side of the epidemic is likely to be much more serious than the economic' (2000, 20). The implications of rising morbidity and mortality are not only that HIV/AIDS is changing the demographic structure of the household but also that it is taking a heavy toll on the socio-economic well-being of households and communities (UNAIDS, 1999). These socio-economic effects are largely borne by individuals, households, and communities. There are indications that rural subsistence households are often more acutely affected than urban families. Sunter and Whiteside (2000) warn that at the household level, AIDS cases will be traumatic and may be economically disastrous. The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
- Household expenditures for medical expenses may increase substantially
- Other members of the household, usually daughters and wives, may miss school or work less in order to care for the sick person
- Death results in: a permanent loss of income, from less labour on the farm or from lower remittances; funeral and mourning costs; and the removal of children from school in order to save on educational expenses and increase household labour, resulting in a severe loss of future earning potential

The following table highlights the fact that the socio-economic impact of HIV/AIDS on households is social, psychological and economic:

Potential impacts of AIDS on household:

Potential impact of AIDS on families	Community stresses
Loss of members	Reduced labour
Impoverishment	Increased poverty
Change in family composition and in adult and child roles	Inability to maintain infrastructure
Loss of labour	Loss of skilled labour, including health workers and teachers
Forced migration	Loss of agricultural inputs and labour
Dissolution	Reduced access to health care
Stress	Elevated morbidity and mortality
Inability to parent and care for children	Psychological stress and breakdown
Loss of income for medical care and education	Inability to marshal resources for community-wide funding schemes or insurance
Demoralisation	
Long-term pathologies (increased depressive behaviour in children)	
Number of multi-generational households lacking middle generation will increase	

Source: Hunter and Williamson (cited in UNAIDS, 1999)

Whiteside and Sunter (2000) posit that the AIDS epidemic will have a greater household economic impact than death from other causes. Their suggestions as to why this may be so include, the protracted nature of HIV illness and the lengthy depletion of household resources giving rise to greater and more enduring hardship

than other causes of death. They note in particular, that not only does poverty help drive the epidemic, but that AIDS increases poverty levels and socio-economic inequality. In respect of the current housing delivery approach in South Africa, they also warn that the concept of granting basic housing where occupants are paying towards the cost of their homes and for utilities, may amplify the economic hardship of households brought about by HIV/AIDS.

8.6 Annexure 6: HIV/AIDS Impacts on Housing Demand and Consumers

In addition to impacting on the construction sector directly, HIV/AIDS will impact on the demand side. At the most basic level, research findings estimate that HIV/AIDS will result in a situation where fewer housing units are needed (Futures International Group, 2001). The BIFSA report also noted that the slowdown in population growth will impact on the demand for low cost housing, speculating that it will reduce the backlog in housing to less than a million by the year 2010. The CETA Sector Skills Plan posits that HIV/AIDS will reduce the demand for low cost housing to such an extent that the demand could be halved by 2010 and that the current annual demand of around 200 000 units could be reduced to 120,000 by that time.

The key factor affecting the demand will however be a change in the structure of households may change, making planning more difficult: households may become headed by children; households may be even poorer than before, and so unable to pay for even the most basic services; and the number of people per household may decrease overtime, or increase to accommodate extended family members affected by HIV/AIDS, such as AIDS orphans. This observation is taken further by Tomlinson (2001) in his assessment of the Housing Policy in the context of HIV/AIDS by stressing that the current housing development approach is fundamentally at odds with the demographic and socio-economic impacts of HIV/AIDS on target beneficiaries. He argues in particular that while still functioning families and including extended families that are sustained by relatives (who typically move into the dwelling unit) will warrant the continuation of pre-existing housing policies; families headed by HIV infected adults, child-headed families, expelled HIV positive family members, homeless children (not all of whom will be orphans and some proportion of whom will be HIV positive) will require shelter of some sort. However, the type of shelter benefit which may be required for the later cannot be effectively addressed by a stand-alone starter house, with services and individual ownership rights. For instance, reliance on extended family structures has resulted in severe overcrowding, which can lead to hygiene and sanitation problems (BESG, 2001 (b)). This is a significant factor of stress on the beneficiaries of the Housing Policy, who are affected by HIV/AIDS. Importantly, Tomlinson notes, whilst the Policy is premised on the incremental household development by beneficiaries of their starter houses, the increased poverty brought about by HIV/AIDS and rising unemployment levels will not enable households to invest in housing development. He explains that;

“Household savings, if there are any, will be used to care for the sick and pay for burials. The earnings of relatives not themselves having HIV infected family members will also to some degree be siphoned off to provide assistance” (Tomlinson, 2001).

The outcome of this perspective is one where construction, in particular consolidation of starter houses and the development of top-structures in the case of serviced sites, becomes a secondary priority for affected households.

8.7 Annexure 7: Summary Of Employment Trends And Dynamics In The Construction Sector

Overview

- Jobs are being lost in the formal sector;
- Jobs are increasing in the informal sector;
- Labour only subcontracting (LOSC) is on the increase;
- Women comprise a very small percentage of the labour force;
- Large firms have a comparative advantage in the industry;
- The rate of retrenchments is declining
- Unionisation is low.

Rate of Unemployment

Between 1994 and 1999, Statistics South Africa reports 130 0000 jobs have been lost in the sector as a whole or 36% of the formally employed. Overall construction employment has dropped by 2,7% to 222,000, implying that a further 6,117 people have lost their jobs in the last year (2000).

Rate of Job Creation

The number of part time employees increased by 41% to 25,000 during the third quarter 2000 (latest available figures published by Statistics South Africa).

A key trend in the construction sector has been the shift from full-time to part-time employment and casual labour. The rise of labour only sub-contracting (LOSC), the fact that official statistics do not record the use of LOSC in the economic sectors, and low levels of unionisation in the sector make an appraisal of the actual number of workers difficult. This casualisation of workers is a key trend and will impact on its vulnerability to HIV/AIDS.

Size and Composition

Building contractors are the largest generator of employment in the construction sector, followed by civil contractors, as shown in the table below. Together they comprise 78% of the formal jobs in the construction sector.

Estimated number of firms and people employed in the construction sector (Department of Labour, 2001)

CATEGORY	NUMBER OF FORMAL ESTABLISHMENTS	PEOPLE EMPLOYED
CONTRACTORS		
Civil	2 883	67 000
Building	**8 000**	**230 000**
Drilling	517	19 998
Refactories	100	1 515
Sub total	11 500	318 513
PROFESSIONAL		
Architects	1 700	3 900
Quantity Surveyors	300	1 700
Consulting Engineers	600	10 300
Sub total	2 594	14 608
MATERIALS MANUFACTURERS		

CATEGORY	NUMBER OF FORMAL ESTABLISHMENTS	PEOPLE EMPLOYED
Brick and Block	Not available	9 887
Ceiling and partitioning	Not available	12 500
Bitumen	Not available	4 000
Sanitary ware	Not available	15 000
Tiles	Not available	4 110
Refactories	12	2 000
Sub total		47 497
GRAND TOTAL		**380 618**

The largest construction firms (turnover of over R1m per annum) are also the largest employers of labour.

In terms of composition, the sector is dominated by African male workers with females comprising a very small proportion being mostly African women.

8.8 Annexure 8: Summary of Trends in Emerging Labour in Low Income Housing

Emerging contractors are particularly important in the low income housing sector. A recent study undertaken by the Department of Housing[22] reveals some trends that are noteworthy for this study. The information in this summary is based on this study. It looks at trends, problems and then makes proposals.

TRENDS:

Employment creation: Emerging contractors are used mostly in the form of labour only subcontracting (LOSC) usually drawn from local communities.
Type of employment: Most of the employment is created for unskilled labour from local communities, mostly as general labourers. Bricklayers (33%), roofing and carpentry (26%) and plumbing (23%) constitute the main trades where local skills are used
Source of labour: local committees assist in the appointment of labour on the projects, insisting on the use of local labour to the exclusion of people outside the area. This has the effect of restricting the movement of labour between projects, even within the same town at times. Employment creation is therefore not sustainable.
Employment opportunities for women: women are marginalised in the construction industry, mostly due to traditional men's reluctance for women to work alongside them. Physical strength requirements are also cited as a reason. Women are mostly employed as administrators and cleaners. The situation is slightly different in some rural areas where men are unavailable due to migrant labour. In most rural areas women are involved indirectly, through brick manufacturing, sometimes even owning and managing such small businesses. There are some exceptions of projects where women constitute the bulk of the labour.
Building costs and profit margins: Emerging contractors are paid per unit house completed with labour and building materials included, rather than on an hourly rate. Costs vary per province, being cheaper in the rural provinces.

PROBLEMS EXPERIENCED:

Access to finance: Emerging contractors battle to gain access to loan financing as they do not have any form of security.
Material Management skills: Lack skills to negotiate good deals with suppliers of building materials, resulting in higher prices for materials. Project leaders are then compelled to provide materials on their behalf and also secure the sites to prevent theft of materials.
Cash Flow: Emerging contractors have difficulty managing cash flow projections which results in material shortages and inability to pay labour at times. This can cause disputes and work stoppages.
Quality Control: Quality of product varies and there is some evidence that some skills transfer occurs in projects, especially if a semi-skilled worker is placed next to a skilled worker. However, there is little evidence that the SAQA accredited training is occurring.

[22] See The Role Played by Emerging Contractors in Government's Low-cost Housing Programme, November 2000). This study involved a survey of 60 housing projects and interviews with role players. Government policy was also analysed

Project management skills: These are lacking and this results in materials shortages, time overruns, wage disputes and contractors not fulfilling contracts with labourers.
Provision of training: Emerging contractors are exposed to very little training during the life span of a project.
Restraint of trade: while the activities of local committees do promote the use of local labour, they prevent any outside labour. This results in political discrimination and nepotism and stunts the development of emerging contractors.

PROPOSALS:

Provision of training: emerging contractors need training in project management, financial management, materials management and so forth.
Access to finance: Facilitation of access to finance is crucial and suggests that where a project and builder is enrolled with the NHBRC, guarantees from organisations such as NURCHA should be waived.
Joint ventures: Joint ventures between emerging contractors and between emerging contractors and established contractors will help build management skills and professionalism. This phenomenon is still developing and is seen as a way to support continued development of emerging contractors.
Removal of artificial barriers to trade: In order to sustain job creation, the free movement of labour should be encouraged. This means abolishing local committees as employment agencies.
Employment equity: government needs to address the employment of women in housing, support women-driven initiatives, establish a quota system for women companies and subcontracted labour.
Regulation of the home building industry: to be done through the NHBRC.
Affirmative procurement policy: support an affirmative procure policy by awarding housing projects to emerging contractors.

8.9 Annexure 9: Summary of Construction Policy interventions

The Department of Public Works is responsible for co-ordinating the development, monitoring and dissemination of government policy for the construction industry. This department has prepared a White Paper and set up a number of new institutions to address the problems in the construction industry.

The Construction Industry White Paper : Creating an Enabling Environment for Reconstruction, Growth and Development in the Construction Industry.

The overall vision of the White Paper is "*of a construction industry policy and strategy that promotes stability, fosters economic growth and international competitiveness, creates sustainable employment and addresses historic imbalances as it generates new industry capacity for industry development*". The paper sets out five important programmes, summarised below:

Developing a Stable Delivery Environment:

- The industry operates in a complex environment and is mostly project specific and dependent on labour which is highly mobile. This makes it challenging to achieve significant levels of growth and development and to develop international competitiveness. This in turn impacts negatively on job creation, employment stability, sustainable growth, investment in human-resource development and plant and equipment. The decline in investment has also resulted in shedding of labour and an increasing reliance on labour-only subcontracting (LOSC). These trends have resulted in considerable loss of trained personnel in the industry and an increase in LOSC. The increased use of LOSC has contributed to declining health, safety, productivity and quality standards as the employees of LOSC have historically been unable to access training. To counter these problems, government has identified a number of programmes.

Enhancing Industry Performance:

The volatile nature of the construction sector over the past two decades has left the industry with capacity and performance constraints. It is estimated that more than half the firms that were active during the industry peak in the early 1980s have either dramatically reduced their capacity or left the industry. There is also a lack of best practice standards and there is no national agency capable of measuring and monitoring best practice. A need for affirmative procurement policies was also identified. The government will establish the Construction Industry Development Board to do this and set up contractor accreditation.

Restructuring Industry Education, Training and Human-Resource Development:

With the change in shift to LOSC, there have been falling contributions to training institutions and fewer enrolments. Ironically, existing training institutions are facing closure while the majority of the sectors' workforce is unable to access such training. Formal companies have cut back on training budgets, exacerbating the situation. To address this the Sector Education and Training Authority was set up.

Promoting New Industry Capacity and the Emerging Sector:

In recognition of the constraints faced by small contractors, government is committed to brining small business into the mainstream economic activity so that they can provide a platform for future black-owned medium-sized and large-scale firms. According to the White Paper, small contractors experience lack of managerial and

marketing ability, lack of access to capital and inexperience which in combination contributes to a vicious circle that stifles growth and development. The erratic availability of construction work diminishes the value of on-the-job, informal training. This will result in a progressively deteriorating standard of skilled work on site. Additionally, the requirement for employing local labour means that contractors are unable to establish a permanent, skilled workforce.

To address these, the government will introduce the Emerging-Contractor Development Programme (ECDP) and improve access to finance through existing institutions.

Developing the Capacity and Role of the Public Service:
This is aimed at maximising employment opportunities through labour-intensive construction by government. It has proposed programmes that target the marginalised and overcome regulatory impediments to industry performance.

The Construction Industry Development Board (CIDB)
This is a statutory body, which will report to an Inter-ministerial Committee (Transport, Housing, DWAF, Provincial and Local government). It has been tasked with covering the following areas:
- Review strategic issues critical to developing an enabling environment;
- Establish a client forum;
- Contractor registration
- Develop priorities;
- Provide co-ordination and research for the industry;
- Develop performance criteria for benchmarking the industry;
- Dissemination of information

The Emerging Contractor Development Programme (ECDP)
This programme will support small scale and emerging construction enterprises to assist with transformation. The focus of the programme will be on the following:
- Promote suitable contracting models;
- Review streamlining of payments;
- Develop training;
- Access to credit;
- Access to training.

Both the White Paper and the CETA Sector Skills Plan for the construction sector indicate a commitment by government to improving the sector. They have created a greater awareness of the problems that emerging contractors face and have put in place programmes to address these.

Procurement Policy
Government procurement policy has undergone reform since the introduction of the new Constitution. To implement the Constitution, the Preferential Procurement Policy Framework Act was introduced, requiring organs of state to determine their preferential procurement polices around the following policy themes[23]:
- Redressing skewed business ownership patterns on racial lines arising from apartheid;
- Greater inclusion of historically disadvantaged individuals;
- Job creation;
- Poverty alleviation;

[23] See South African Country Status Report form Regional Conference: "Developing the Construction Industries of Southern Africa" page 3.

- Redressing uneven regional development;
- Increasing South African content;
- Quality standards.

Priority is to be given to the first two categories. Interim strategies for reform are outlined in the 10-Point Plan prepared by government.

The National Department of Housing has also introduced a new procurement policy. This is to bring the tendering on housing projects into line with general procurement policy. The new policy will ensure greater competition between developers as they bid on specific projects identified by local and provincial authorities.

8.10 Annexure 10: Conceptual Framework of the research

	Objective	Purpose and outputs	Questions	Methodological activity			
				Literature review	National assessment	Settlement studies	Provincial surveys
A	To specify and describe the **economic interests of the supply systems** of state assisted housing development[24]. • What the typical housing supply systems? • What are their economic interests and intrinsic vulnerabilities? • What are the delivery agents involved in contributing to the components of the supply systems? • What are their economic interests and intrinsic vulnerabilities?	This enables us to understand and specify the economic interests that need to be considered to assess the economic impact on different supply systems for state assisted housing development. This enables us to disaggregate each supply system per component and typical role which the delivery agents perform in the system.	⇒ What are the supply systems for state assisted housing development? ⇒ What are the relevant subsidy schemes applicable to these supply systems? ⇒ What are the typical components of these supply systems? ⇒ What are the intrinsic vulnerabilities of these supply systems? ⇒ What are the typical delivery agents involved in the supply systems? ⇒ What are the economic interests of these delivery agents? ⇒ What are the intrinsic vulnerabilities of these delivery agents?	Identification of status quo and indicators of change in terms of the supply systems, subsidy schemes, components and delivery agents	Verification of literature review and national inputs into the supply systems, components, delivery agents and intrinsic vulnerabilities.	Project level specifications in terms of the supply systems, components and delivery agents and detail in terms of the intrinsic vulnerabilities of the systems and delivery agents.	Provincial variations on the supply systems, components, delivery agents, and intrinsic vulnerabilities.

[24] Although we will note and endeavour to account for a range of variations in the practices of state-assisted housing development will focus of the typical and dominant variations as specified in the section presenting a clarification of key concepts.

	Objective	Purpose and outputs	Questions	Methodological activity			
				Literature review	National assessment	Settlement studies	Provincial surveys
B	To Focus on the typical role of different delivery agents in each supply system to develop an understanding of the **cost of production of the delivery agent's role**. • What is the cost of production of the roles performed by delivery agents in the components of the supply systems? • What factors affect the cost of production of those roles?	This will enable us to develop a baseline of cost of production of the different roles performed by the delivery agents in each component of the supply systems, and identify variations per subsidy scheme.	⇒ What are the typical delivery agents for the different components of the supply systems and per subsidy scheme? ⇒ What are the basic labour and capital production profiles of those roles? ⇒ What is the cost of production of the typical roles performed by these delivery agents[25]? ⇒ What factors affect the cost of production of those roles?	Identification of cost of production borne by the subsidy schemes in the different supply systems and preliminary indicators of actual costs of production per supply system and subsidy scheme.	Inputs into of the specific costs of production per component of the housing supply systems and delivery agents.	Specific project-level cost of production, and detail on the variations affecting the cost of production of the roles.	Verification of costs of production and provincial cost of production variations.

[25] Where these costs are regulated in terms of provincial or national regulations, we will use the regulated costs as the baseline, although we will strive to identify where variations to the regulated costs occur, and to identify actual cost of production where available.

	Objective	Purpose and outputs	Questions	Methodological activity			
				Literature review	National assessment	Settlement studies	Provincial surveys
C	To develop a baseline from which to identify and specify delivery agents' **susceptibility to demographic impact and vulnerability to economic impact**. • What are the key labour profiles and employment practices in terms of the performance of the roles contributing to the components of the supply systems? • To what extent could the role performed by a specific delivery agent be affected by HIV/AIDS demographic impact of another delivery agent?	This activity will enable us to develop a baseline from which to identify demographic HIV/AIDS ***susceptibility to infection*** specific to the delivery agents. Secondly, HIV/AIDS impact ***vulnerability*** (relating to the performance of those roles, i.e. labour practices, dependence on capital as opposed to labour intensive production processes, dependence on other role-players, institutional frameworks, regulations, demand…) will also be identified. Together these variables will be utilised in the economic modelling exercise.	⇒ What are the demographic profiles of the different types of labour mobilised for the performance of each role by the delivery agents? ⇒ What is the extent of reliance on specific types of labour and ease of replacement of labour for the performance of each role by the delivery agents? ⇒ What are the typical employment practices in terms of labour mobilised for the performance of the roles? ⇒ To what extent could the role performed be vulnerable to economic impact in terms of other delivery agents' susceptibility to HIV/AIDS demographic impact in the supply systems?	Preliminary insights into demographic profiles and practices of role-players indicators of impact	Base line of demographic information and perceptions of demographic impact.	Project-specific demographic information per specific project-level delivery agents and evidence of demographic and economic impact.	Provincial demographic variables in terms of labour profile and n susceptibility and vulnerability to impact.

	Objective	Purpose and outputs	Questions	Methodological activity			
				Literature review	National assessment	Settlement studies	Provincial surveys
D	To assess the demographic impact of HIV/AIDS on the supply systems of state assisted housing. To assess the internal economic impact of HIV/AIDS on the supply systems of state assisted housing. • What are the potential demographic impacts of HIV/AIDS on the delivery systems? • What is the internal economic impact of HIV/AIDS on the supply systems?	This will enable us to consider projected HIV seroprevalence rates, morbidity rates and mortality rates of labour mobilised by the delivery agents in the supply systems. This will be used to assess what the economic impact of HIV/AIDS on the supply systems are as a result of: - HIV/AIDS related absenteeism and subsequent loss in productivity; - additional productivity losses from morbidity impacts on level of effort, decrease in morale, potential decrease in experience of labour as a result of younger less skilled recruits; - changing demands on employee benefits and employee assistance schemes; - Retraining and rehiring needs?	⇒ What are the HIV seroprevalence, AIDS morbidity, and AIDS mortality projections by various strata[26] until 2010 for no-AIDS and low and high AIDS scenarios? ⇒ What are the estimates of the internal economic impact of HIV/AIDS on the supply systems of state assisted housing based on defined assumptions of underlying production costs[27] and the impact of HIV/AIDS on these costs?	Preliminary perceptions of economic impact and indicators of impact	Sub-sector impact overview	Evidence and specification of impacts where available	Provincial specific data collection and analysis of impact per role.

[26] Attempts will be made to stratify individuals functioning in the supply side of state assisted housing

[27] These costs will be assessed and estimated in the survey and interview phase of the project. These data and estimations will determine the nature and extent of the economic impact assessment. The economic impact assessment is therefore not empirical in that these costs will not be measured directly.

	Objective	Purpose and outputs	Questions	Methodological activity			
				Literature review	National assessment	Settlement studies	Provincial surveys
E	**To aggregate the economic impact of** HIV/AIDS on the supply systems **and determine the financial feasibility** of the supply systems according to the different subsidy schemes. • How may HIV/AIDS economic impacts affect the housing supply systems? How does this affect economic feasibility of the state-assisted housing supply systems an • in turn the housing	The changes in the cost of production and financial viability for the different supply systems will be aggregated to provide an indication of how they affects the feasibility of the overall framework of state assisted housing.	⇒ What are the different levels of flexibility of the delivery agents and their ability to accommodate economic impacts? ⇒ What are the possible outcomes of economic impacts on the delivery agents, for each supply system per subsidy type? ⇒ What are the levels of robustness of the different supply chains to accommodate or mitigate the economic impacts? ⇒ What are the implications of the economic impact of HIV/AIDS on the current and possible housing policy directions? ⇒ What should construction sector role-players, involved in the development of low-income housing, need to be made aware of in respect of the economic impact which HIV/AIDS may have on their activities and interests?	Perceptions of impacts on the supply systems and responses. Indicators of impacts on the supply systems and responses, where evidence exists.			Provincial and national assessment of impact based on modelling.